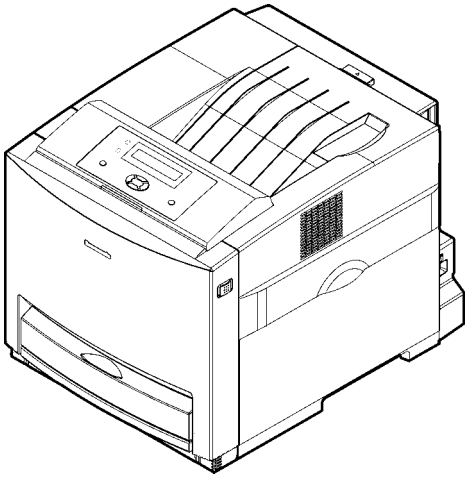
ORDER No.KM60503633CE
G0

Service Manual

Color Laser Printer



DP-CL18

Panasonic®

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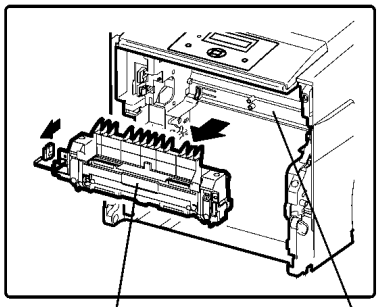
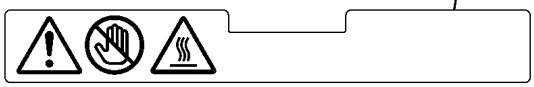
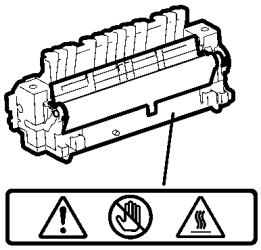
⚠WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.





CAUTION
HOT SURFACE
DO NOT TOUCH



CAUTION
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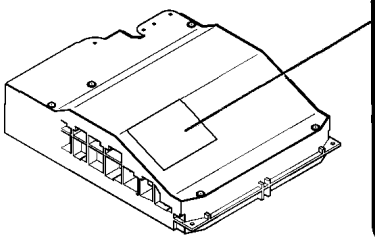

注意 - ここを開くとクラス3B不可視レーザ放射が出る。
ビームに身をさらさないこと。
CAUTION - Class 3B invisible laser radiation when open.
AVOID EXPOSURE TO BEAM.
VORSICHT - Unsichtbare Laserstrahlung nach Klasse 3B beim Öffnen.
Kontakt mit Strahlung meiden.
ATTENTION - Appareil à rayonnement laser de classe 3B.
Rayonnement laser invisible dangereux en cas d'ouverture.
Exposition au faisceau dangereuse.
ATENCIÓN - Clase 3B Radiación láser invisible al ser abierto.
Evitar exponerse a los rayos.
VARNING - Klass 3B. Osynlig laserstrålning när denna del är öppen.
Strålen är farlig.
VAROITUS - Avattaessa purkautuu luokan 3B näkymätöntä lasersäteilyä.
Älä altista itseäsi säteilylle.
ADVARSEL - Usynlig laserstråling i klasse 3B ved åbning.
Undgå udsættelse for stråling.
ADVARSEL - Klasse 3B, usynlig laserstråling ved åpning.
Unngå eksponering for strålen.
警告 - 打开时有 3B 级不可见激光辐射。
请避免暴露于光束。

Laser diode properties (4 provided)
Laser output : 5 mW max
Wavelength : 785 nm
Emission duration : Continuous

This printer utilizes a laser. Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CLASS 1 LASER PRODUCT
KLASSE 1 LASER PRODUKT
CLASSE 1 LASER PRODUIT
CLASE 1 LÁSER PRODUCTO

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

IMPORTANT INFORMATION ABOUT FREE, (PbF), SOLDERING

If lead free solder was used in the manufacture of this product, the printed circuit boards will be marked PbF. Standard leaded, (Pb), solder can be used as usual on boards without the PbF mark.

When this mark does appear, please read and follow the special instructions described in this manual on the use of PbF and how it might be permissible to use Pb solder during service and repair work.

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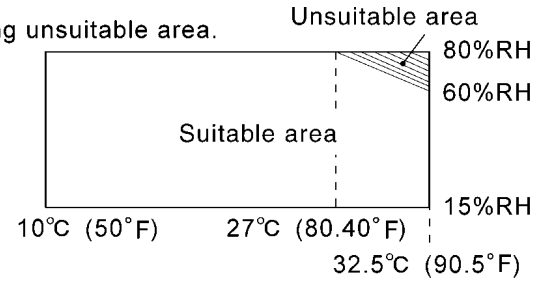
1 Introduction

1.1. Specifications

Specifications are subject to change without notice.

<table>
<tr><td rowspan="11">Printer</td><td>CPU</td><td>SPC603ei (400MHz)</td></tr>
<tr><td>Printing Method</td><td>Electro-Photographic : Single pass four-color (CMYK)
Semiconductor Laser
Organic Photoconductor Drum
Accumulator Belt Transfer System</td></tr>
<tr><td>Interface</td><td>Parallel Interface (IEEE1284), Universal Serial Bus (USB2.0 Full Speed)
Ethernet (100 Base-TX/10 Base-T)</td></tr>
<tr><td>Printing Speed</td><td>The printing speeds listed in the following table represent the time the printer produces multiple prints on various media and resolution (Continuous throughput rate).
Continuous Printing Speed
<table>
<tr><th rowspan="2">Print Mode</th><th rowspan="2">Media</th><th colspan="2">Simplex (Page/min.)</th><th colspan="2">*1 Auto Duplex (images/min.)</th></tr>
<tr><th>B/W</th><th>Color</th><th>B/W</th><th>Color</th></tr>
<tr><td rowspan="5">Standard/Fine</td><td>Letter</td><td>18</td><td>18</td><td>16.9</td><td>16.9</td></tr>
<tr><td>A4</td><td>17</td><td>17</td><td>16.1</td><td>16.1</td></tr>
<tr><td>Legal</td><td>14.5</td><td>14.5</td><td>13.9</td><td>13.9</td></tr>
<tr><td>Transparency (Let)</td><td>8.4</td><td>8.4</td><td>---</td><td>---</td></tr>
<tr><td>Transparency (A4)</td><td>8</td><td>8</td><td>---</td><td>---</td></tr>
<tr><td rowspan="3">Enhance</td><td>Letter</td><td>9.5</td><td>9.5</td><td>8.4</td><td>8.4</td></tr>
<tr><td>A4</td><td>9</td><td>9</td><td>8</td><td>8</td></tr>
<tr><td>Legal</td><td>7.6</td><td>7.6</td><td>6.9</td><td>6.9</td></tr>
</table>
*1 when printing both sides of the sheet using the Automatic Duplex Unit (option)</td></tr>
<tr><td>Print Mode</td><td>PCL : Standard (600x600 dpi), Fine (1200x600dpi), Enhance (1200x1200 dpi)
PS/PCL : Standard (600x600 dpi), Fine (1200x600dpi), Enhance (1200x1200 dpi)
It is strongly recommended to add Optional Memory when printing documents in Enhance mode.</td></tr>
<tr><td>Paper Input</td><td>Media Tray : 530 sheets [75 g/m² (20 lbs.)]
Multi-Purpose Tray : 100 sheets [75 g/m$_2$ (20 lbs.)]</td></tr>
<tr><td>Paper Output</td><td>Face Down only : 250 sheets [75 g/m (20 lbs.)]</td></tr>
<tr><td>RAM</td><td>PCL : Standard 128MB (Including System) / Max.512MB
PS/PCL : Standard 128MB (Including System) / Max.512MB
(with optional DIMM)</td></tr>
<tr><td>Emulation</td><td>PCL6 (PS3 Option)</td></tr>
<tr><td>Warm-up Time</td><td>35 seconds [PCL model Standard Memory without the printer's hard disk drive at 20℃ (68°F)/65%RH/120V]</td></tr>
<tr><td>First Printing Time</td><td>
<table>
<tr><th>Print Mode</th><th>Power Save Mode "ON" (default)</th><th>Power Save Mode "OFF"</th></tr>
<tr><td>Color Print</td><td>25 seconds*</td><td>15.5 seconds *</td></tr>
<tr><td>Monochrome Print</td><td>25 seconds*</td><td>15.5 seconds*</td></tr>
</table>
* Standard print mode, simplex print, at 20℃ (68° F)/65%RH</td></tr>
</table>

Printer	Operating Environment	10 °C to 32.5 °C (50 °F to 90.5 °F) 15 % to 80 % RH Except the following unsuitable area. 	
	Storage Environment	0° C to 40° C (32° F to 104° F) 10 % to 80 % RH (Non-condensing)	
	Power Supply	120VAC ± 10%, 50/60 Hz	
	Power Consumption	On Printing Max : 1200W, Ave : 460W Power Save Mode : 8W (AC120V), 9W (AC220 ~ 240V) (Measured by Panasonic's method)	
	Dimension (HxWxD)	15.7" x 16.5 " x 21.1" (399 x 419 x 536 mm)	
	Weight (lbs)	Net : Approx. 32 kg (70.6 lbs) excluding packaging material Gross : Approx. 35 kg (77 lbs)	
	Noise Level	Less than 51dbA (printing mode, ISO)(except peak noise) Less than 40dbA (standby mode, ISO)(except peak noise)	
	Fixing System	IH (Induction Heating) Fusing System No Oil required	
	Developing System	Non magnetic mono component waxed toner Contact Developing System	
Paper	Basic Paper Weight	60 to 105 g/m^2 (16 to 28 lbs.)	
	Thickness	3.7 to 7.5 mils (1 mil=1/1000")	
	Paper Size	Letter	216 X 279 mm (8.5" X 11")
		A4	210 X 297 mm (8.26" X 11.69")
		Legal	216 X 356 mm (8.5" X 14")
		B5 (JIS)	182 X 257 mm (7.16" X 10.11")
		Executive	184 X 267 mm (7.25" X 10.5")
		A5	148 X 210 mm (5.82" X 8.26")
		16K	195 X 270 mm (7.67" X 10.62")
	Envelope	Envelope #9	98 x 225 mm (3.87" x 8.87")
		Envelope #10 (QUA90008 Recommend)	105 x 241 mm (4.12" x 9.5")
		Envelope DL	110 x 220 mm (4.33" x 8.66")
		Envelope C5	162 x 229 mm (6.37" x 9.01")
		Envelope C6	114 x 162 mm (4.48" x 6.37")
		Envelope Monarch	98 x 191 mm (3.87" x 7.5")
		Envelope Youkei 4 Gou	105 x 235 mm (4.13" x 9.25")
		JP Post Card	100 x 148 mm (3.93" x 5.82")
		JP Double Post Card	148 x 200 mm (5.82" x 7.87")
	Coated Paper	Letter	216 X 279 mm (8.5" X 11")
		A4	210 X 297 mm (8.26" X 11.69")
	Transparency	3M CG3300 (recommended)	
	Labels	AVERY 5160, AVERY 5161, AVERY 5162, AVERY 5163, AVERY 5660, AVERY 5661, AVERY 5662, AVERY 5663, Avery L7159, Avery L7160, Avery L7161, Avery L7162, Avery L7163, Avery L7164 (recommended)	

IMPORTANT INFORMATION ABOUT, (PbF), SOLDERING

If lead free solder was used in the manufacture of this product, the printed circuit boards will be marked PbF. Standard leaded, (Pb), solder can be used as usual on boards without the PbF mark.
When this mark does appear, please read and follow the special instructions described in this manual on the use of PbF and how it might be permissible to use Pb solder during service and repair work.

1.2. Options, Accessories and Supplies

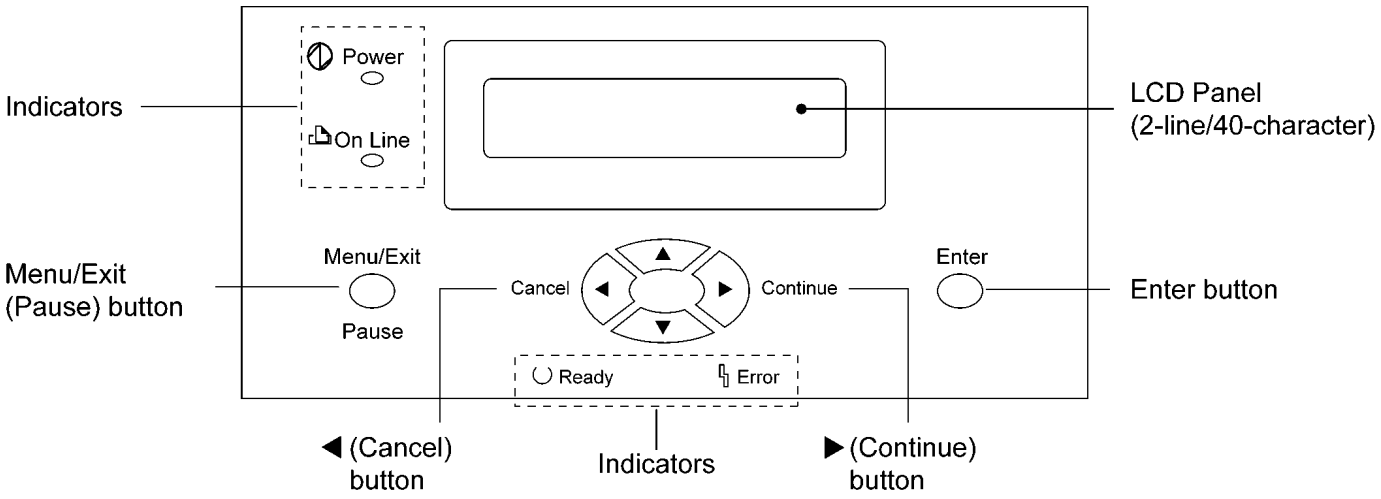
Model No.	Description	Remarks
DQ-UR3K	Black Toner Cartridge 6K	Average Life (6,000 pages *1)
DQ-UR3C	Cyan Toner Cartridge 6K	Average Life (6,000 pages *1)
DQ-UR3M	Magenta Toner Cartridge 6K	Average Life (6,000 pages *1)
DQ-UR3Y	Yellow Toner Cartridge 6K	Average Life (6,000 pages *1)
DQ-UR4C	Cyan Toner Cartridge 3K	Average Life (3,000 pages *1)
DQ-UR4M	Magenta Toner Cartridge 3K	Average Life (3,000 pages *1)
DQ-UR4Y	Yellow Toner Cartridge 3K	Average Life (3,000 pages *1)
DQ-UP3K	Black Print Cartridge	Average Life (15,000 pages *1)
DQ-UP3C	Color Print Cartridge	Average Life (15,000 pages *1)
DQ-FU3	Fuser Unit	Average Life (100,000 pages *1)
DQ-BF3	Waste Toner Cartridge	Average Life (14,000 pages *1)
DQ-BE3	Accumulator Unit	Average Life (100,000 pages *1)
DQ-BR3	Transfer Roller	Average Life (100,000 pages *1)
DA-DS1	Optional Paper Feeder	
KX-CLAD1	Automatic Duplex Unit	
KX-CLEM3	128MB DIMM	
KX-CLEM4	256MB DIMM	
KX-CLHD2	Hard Disk Drive	
DA-MC2	Upgrade Kit for DP-CL18 (PS3)	

***1**

The rated life expectancy of each consumable is based on printing under specific operating conditions such as page coverage for a particular page size (5% coverage per color at 600 x 600 dpi resolution on A4 size paper). The actual consumable life will vary depending on its use and other printing variables including page coverage, page size, media type, print resolution, continues or intermittent printing, number of color planes, ambient temperature and humidity.

1.3. Printer Panel

1.3.1. Panel Operation

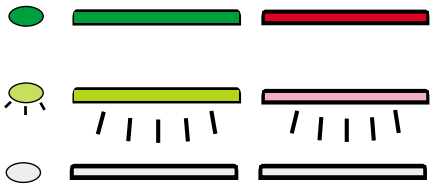


Button Operation

Button	Operation
Menu/Exit **Pause**	While **Ready** is displayed on the LCD, pressing this button will allow you to enter the Menu mode.
	In the Menu mode, pressing this button exits the Menu mode and Ready is displayed on the LCD.
	When **Processing** or **Printing** is displayed in the upper line of the LCD, pressing this button will allow you to pause printing. While **Pause printing** is displayed on the LCD, pressing this button will allow you to resume printing.
	Pressing this button displays the previous item of the same level menu.
	Pressing this button decreases the numerical value one by one. Holding down this button will allow you to scroll faster.
	Pressing this button displays the next item of the same level menu.
	Pressing this button increases the numerical value of one by one. Holding down this button will allow you to scroll faster.
Continue	Pressing this button goes to the lower level menu. If the lower level menu does not exist, the action will be ignored.
	When performing the manual duplex printing function, after even pages are printed, odd pages are printed by pressing this button.
	When **LOAD Letter** or **Memory Overflow,** etc. appears on the LCD, you can print the current job anyhow by pressing this button. However, the print may not be proper.
Cancel	Pressing this button goes to the upper level menu. If the upper level menu does not exist, the action will be ignored.
	While the printer prints, pressing this button will allow you to stop printing or cancel processing the current job.
Enter	Pressing this button goes to the lower level menu. The selection is activated by pressing this button if the lower level menu does not exist.
	When the life of the Accumulator Unit, Fuser Unit or Transfer Roller is worn out in the middle of printing, hold down this button more than 3 seconds after replacing the component. The remaining life is reset and the replacement error will be cleared.

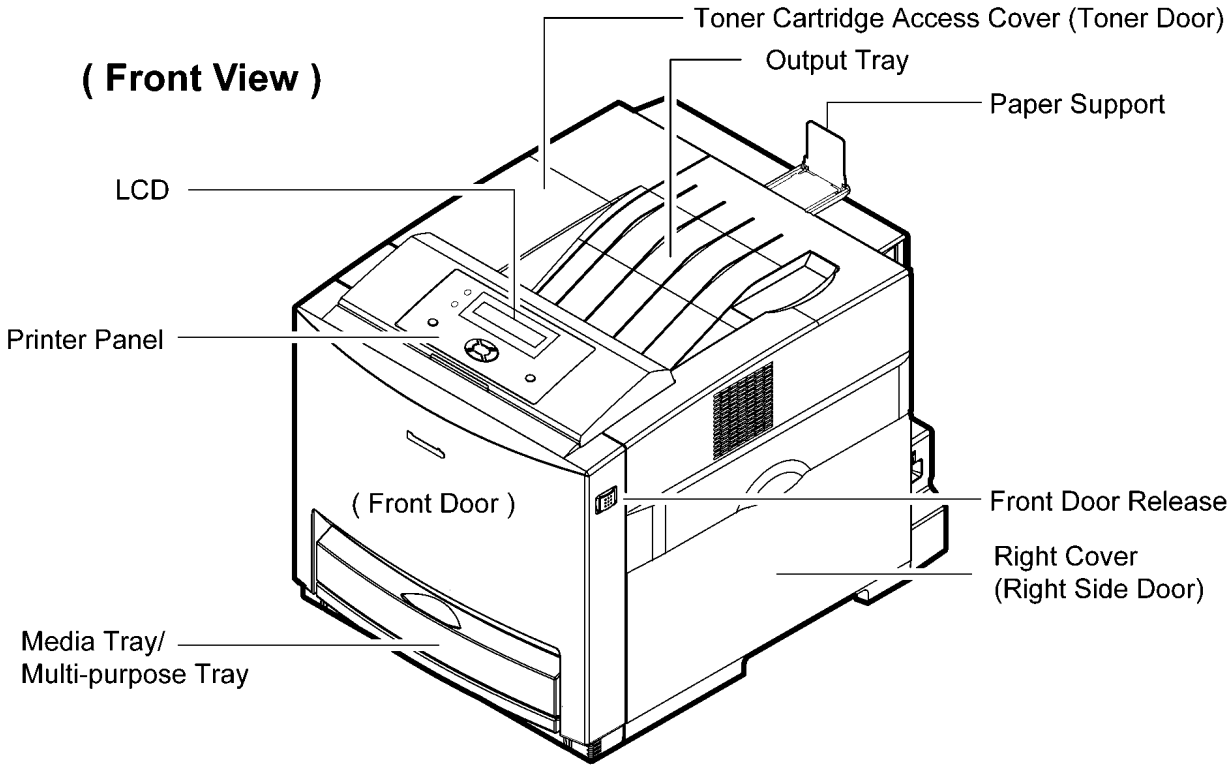
1.3.2. LED Indicator

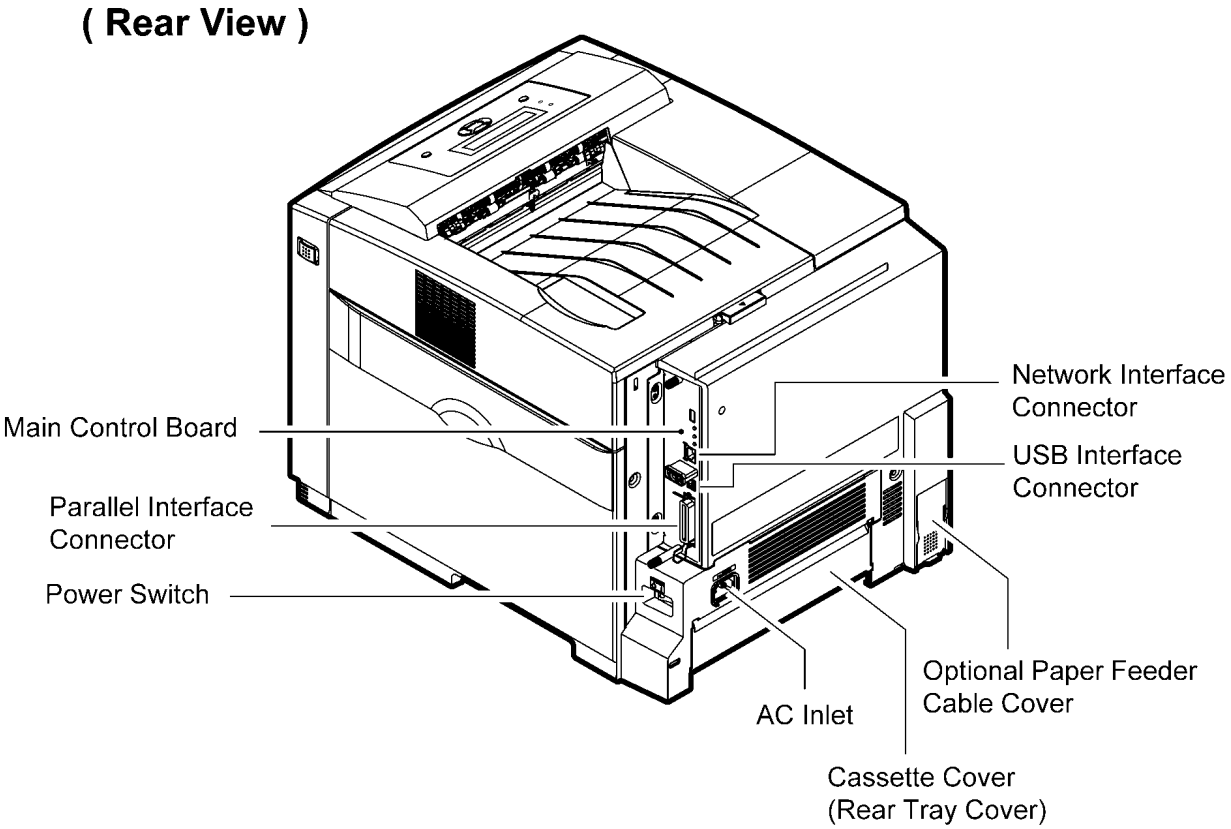
Three indicators show the following printer's status:



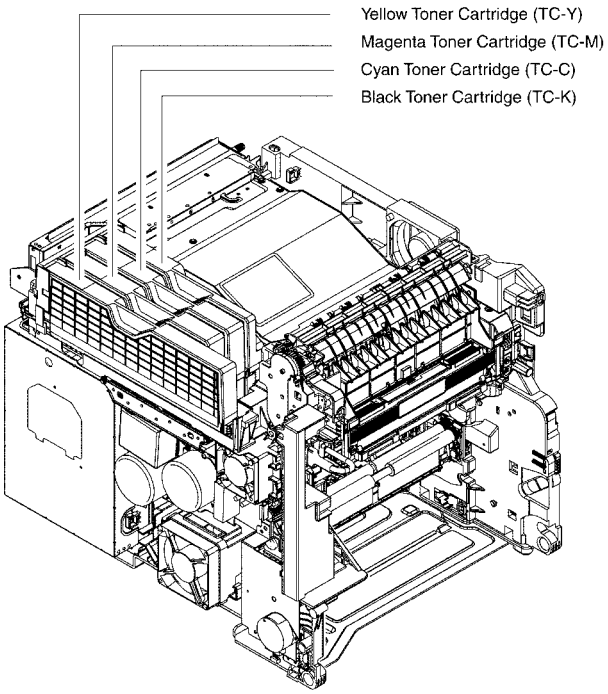
Indicator	Printer Status
Power	Printer is turned on.
Power	Printer is in the Power Save mode.
Power	Printer is turned off.
On Line	Printer is ready for printing. (Printer warms up and starts printing automatically when it receives print data.)
On Line	Printer is in the Off Line.
Ready Error	Printer is in the normal condition. Printer is not in error conditions.
Ready Error	Printer is receiving data, printing or data remains in the memory. Printer is in the Menu mode.
Ready Error	Printer recoverable errors (media jam, media empty, etc.) has occurred.
Ready Error	An internal error (Call for Service Error) has occured.

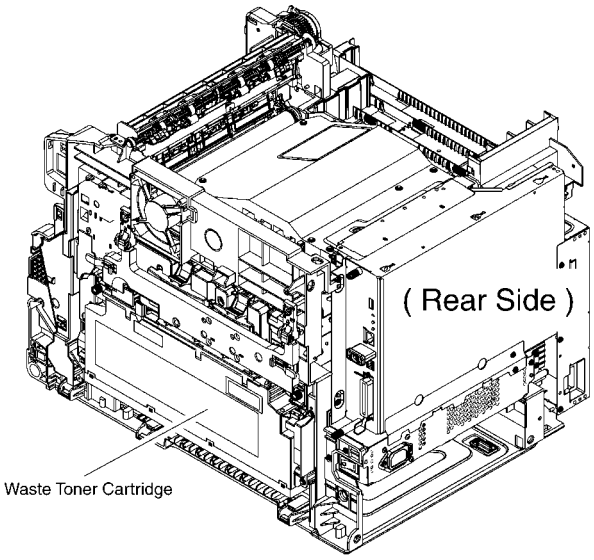
1.4. External View

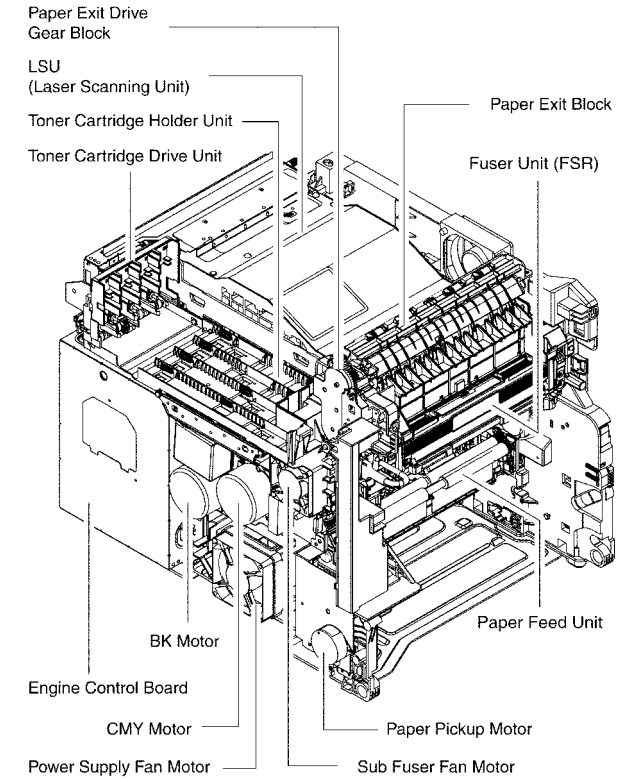


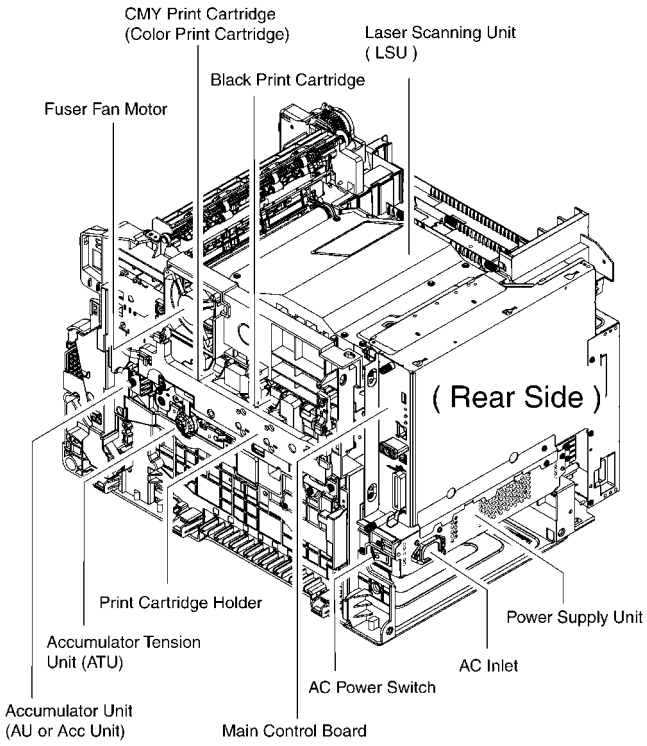


1.5. Main Components Layout

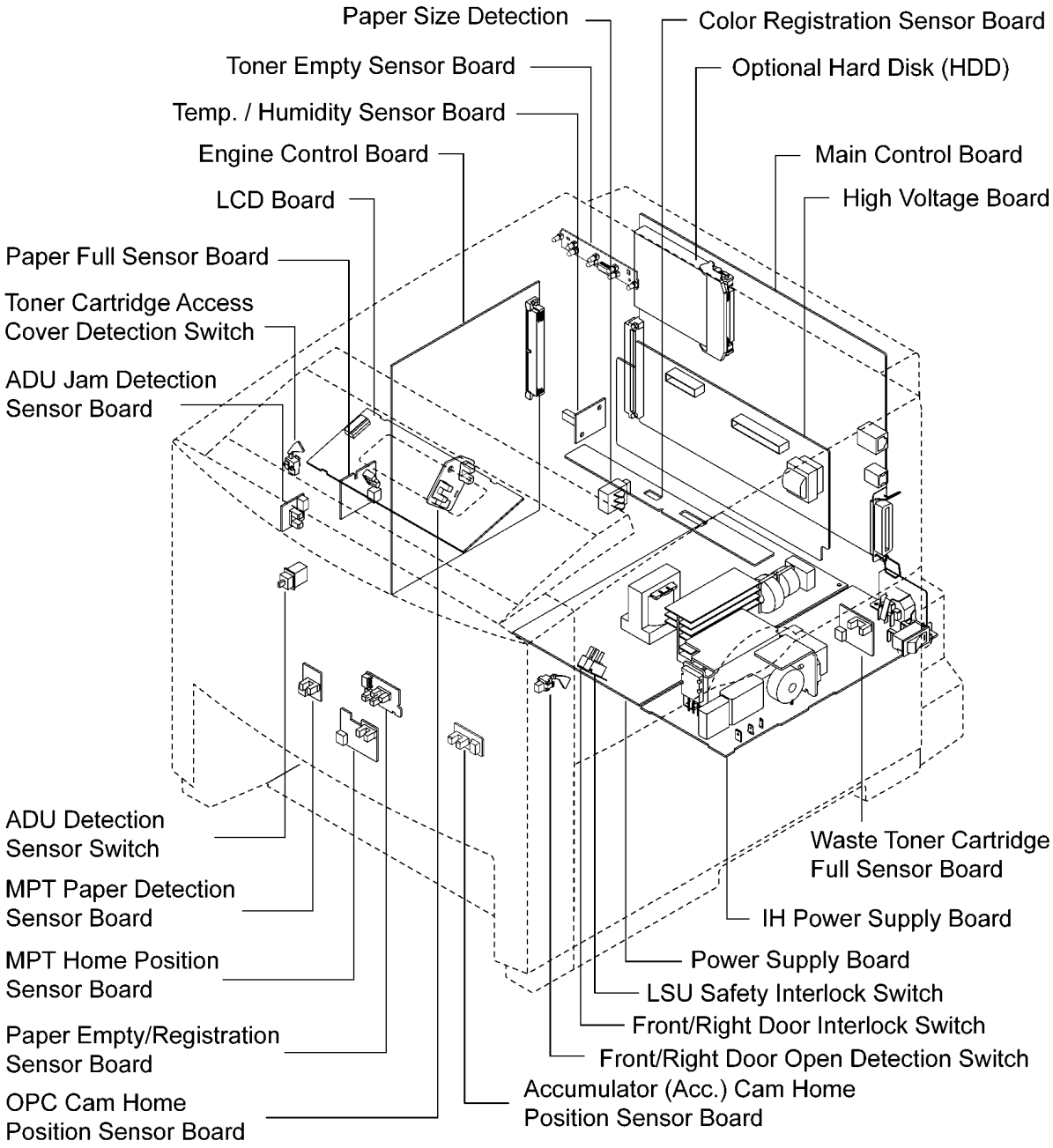





Paper Exit Drive
Gear Block
LSU
(Laser Scanning Unit)
Toner Cartridge Holder Unit
Toner Cartridge Drive Unit
Paper Exit Block
Fuser Unit (FSR)
BK Motor
Engine Control Board
CMY Motor
Power Supply Fan Motor
Paper Feed Unit
Paper Pickup Motor
Sub Fuser Fan Motor


CMY Print Cartridge
(Color Print Cartridge)
Laser Scanning Unit
(LSU)
Black Print Cartridge
Fuser Fan Motor
(Rear Side)
Print Cartridge Holder
Power Supply Unit
Accumulator Tension
Unit (ATU)
AC Inlet
AC Power Switch
Accumulator Unit
(AU or Acc Unit)
Main Control Board

1.6. PCB, Switches and Sensors Identification


Paper Size Detection
Color Registration Sensor Board
Toner Empty Sensor Board
Optional Hard Disk (HDD)
Temp. / Humidity Sensor Board
Engine Control Board
Main Control Board
LCD Board
High Voltage Board
Paper Full Sensor Board
Toner Cartridge Access Cover Detection Switch
ADU Jam Detection Sensor Board
ADU Detection Sensor Switch
Waste Toner Cartridge Full Sensor Board
MPT Paper Detection Sensor Board
IH Power Supply Board
MPT Home Position Sensor Board
Power Supply Board
LSU Safety Interlock Switch
Paper Empty/Registration Sensor Board
Front/Right Door Interlock Switch
Front/Right Door Open Detection Switch
OPC Cam Home Position Sensor Board
Accumulator (Acc.) Cam Home Position Sensor Board

Sensor/Switch/Board Name	Description
Paper Size Detection	For detecting the current selected paper size at the standard paper cassette.
Toner Empty Sensor Board	For detecting whether the toner is low (or empty) or not.
Temp./Humidity Sensor Board	For sensing the ambient temperature and humidity.
Paper Full Sensor Board	This board has the paper full sensor. The paper full sensor is for detecting whether the output paper tray is full.
Toner Cartridge Access Cover Detection Switch	For detecting whether the toner cartridge access cover is closed. If the toner cartridge access cover is opened, printing is not possible.
ADU Jam Detection Sensor Board	For detecting whether the paper is ejected from the ADU (Option Automatic Duplex Unit) within the proper time.
ADU Detection Sensor Switch	For detecting whether the ADU is installed.
MPT Paper Detection Sensor Board	For detecting whether the paper is set on the MPT (multi-purpose paper tray).
MPT Home Position Sensor Board	For detecting the home position of the MPT pickup roller.
Paper Empty/Registration Sensor Board	This board has the paper empty and registration sensors. The paper empty sensor is for detecting whether the paper is set on the standard paper cassette. The registration sensor is for detecting whether the sheet of paper arrived at the registration roller after being properly picked and traveling through the paper feed rollers.
OPC Cam Home Position Sensor Board	For detecting the home position of the OPC drum.
Acc. Cam Home Position Sensor Board	For detecting the home position of the accumulator cam and controlling the printing process.
Front/Right Door Open Detection Switch	For detecting whether the front door or right cover is opened.

Sensor/Switch/Board Name	Description
LSU Safety Interlock Switch	When the front door or right cover is opened (or both are opened), the power that is supplied to the laser diode drive circuit in the laser unit is shut off because this switch is opened
Front/Right Door Interlock Switch	When the front door or right cover is opened (or both are opened), the printing is not done because this switch is opened.
Waste Toner Cartridge Full Sensor Board	For detecting whether the waste toner cartridge is full.
Color Registration Sensor Board	For reading the Color Registration Check Pattern to calculate adjustment for the fine Color Registration Adjustment.

2 About Lead Free Solder

Note:

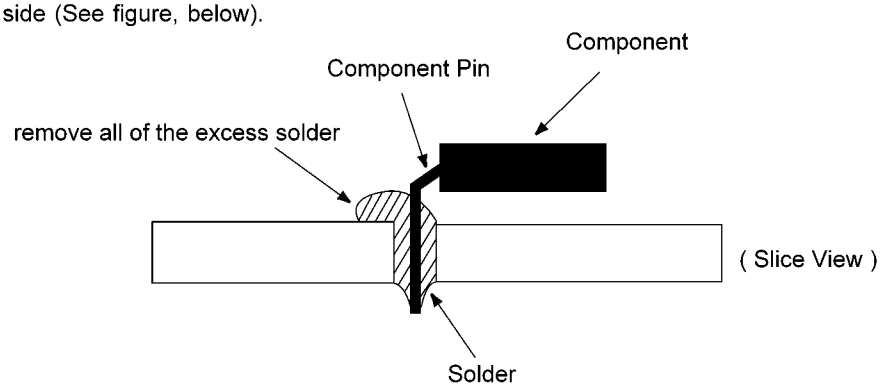
In the information below, Pb, the symbol for lead in the periodic table of elements, will refer to standard solder or solder that contains lead.

The Lead Free Solder (PBF) is made from Tin, (Sn), Sliver, (Ag), and Copper, (Cu).

This model, and others like it, manufactured using lead free solder will have PbF stamped on the PCB. For service and repair work we suggest using the same type of solder although, with some precautions, standard Pb solder can also be used.

Caution

- PbF solder has a melting point that is 50° ~ 70° F, (30° ~ 40°C) higher than Pb solder. Please use a soldering iron with temperature control and adjust it to 700° ± 20° F, (370° ± 10°C). In case you are using a high temperature soldering iron, please be careful not to heat too long.
- PbF solder will tend to splash if it is heated much higher than its melting point, approximately 1100°F, (600°C).
- If you must use Pb solder on a PCB manufactured using PbF solder, remove as much of the original PbF solder as possible and be sure that any remaining is melted prior to applying the Pb solder.
- When applying PbF solder to double layered boards, please check the component side for excess which may flow onto the opposite side (See figure, below).



2.1. Suggested PbF Solder

We recommend you to use the following solder when re-soldering component for repair. Before using other Pb free solder than the following solder, be sure to confirm a solder maker you appoint has made license agreements to be required when using Pb free solder legally.

Supplier: Senju Metal Industry Co., Ltd. (http://www.senju-m.co.jp)

Part Description in Senju: ECO SOLDER RMA02 P3 M705 Series

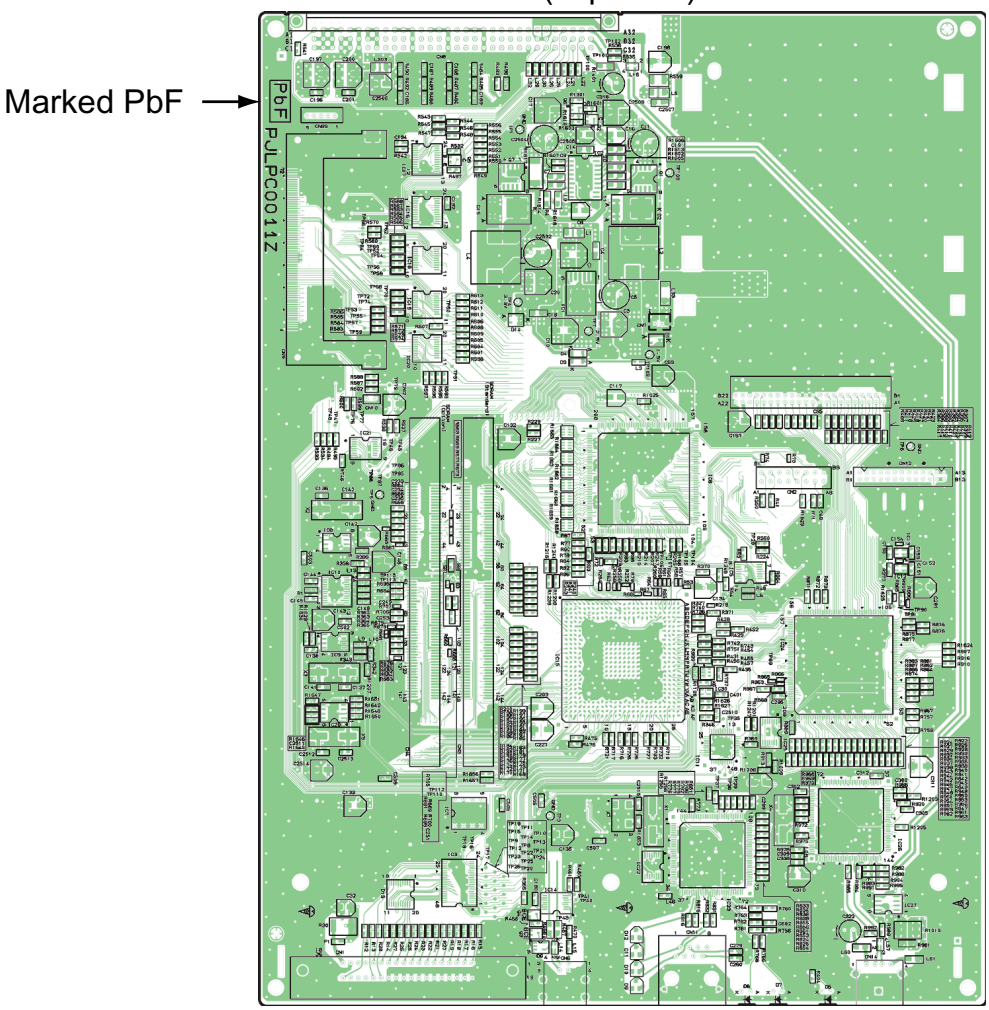
Note:

When the recommended PbF solder is not available at Senju Metal Industry Co., Ltd., see section 14.10 PbF Solder Service Part Number.

2.2. How to recognize that PbF Free solder is used

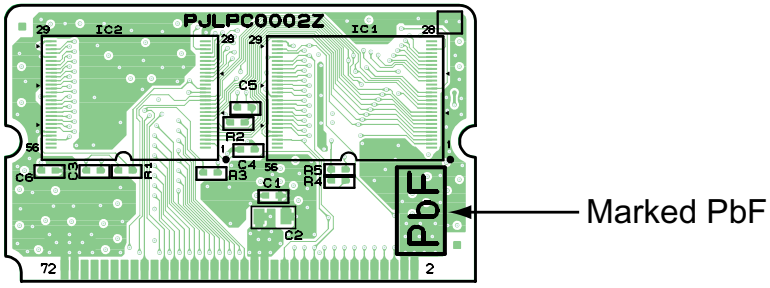
2.2.1. Main Control Board

(Top View)

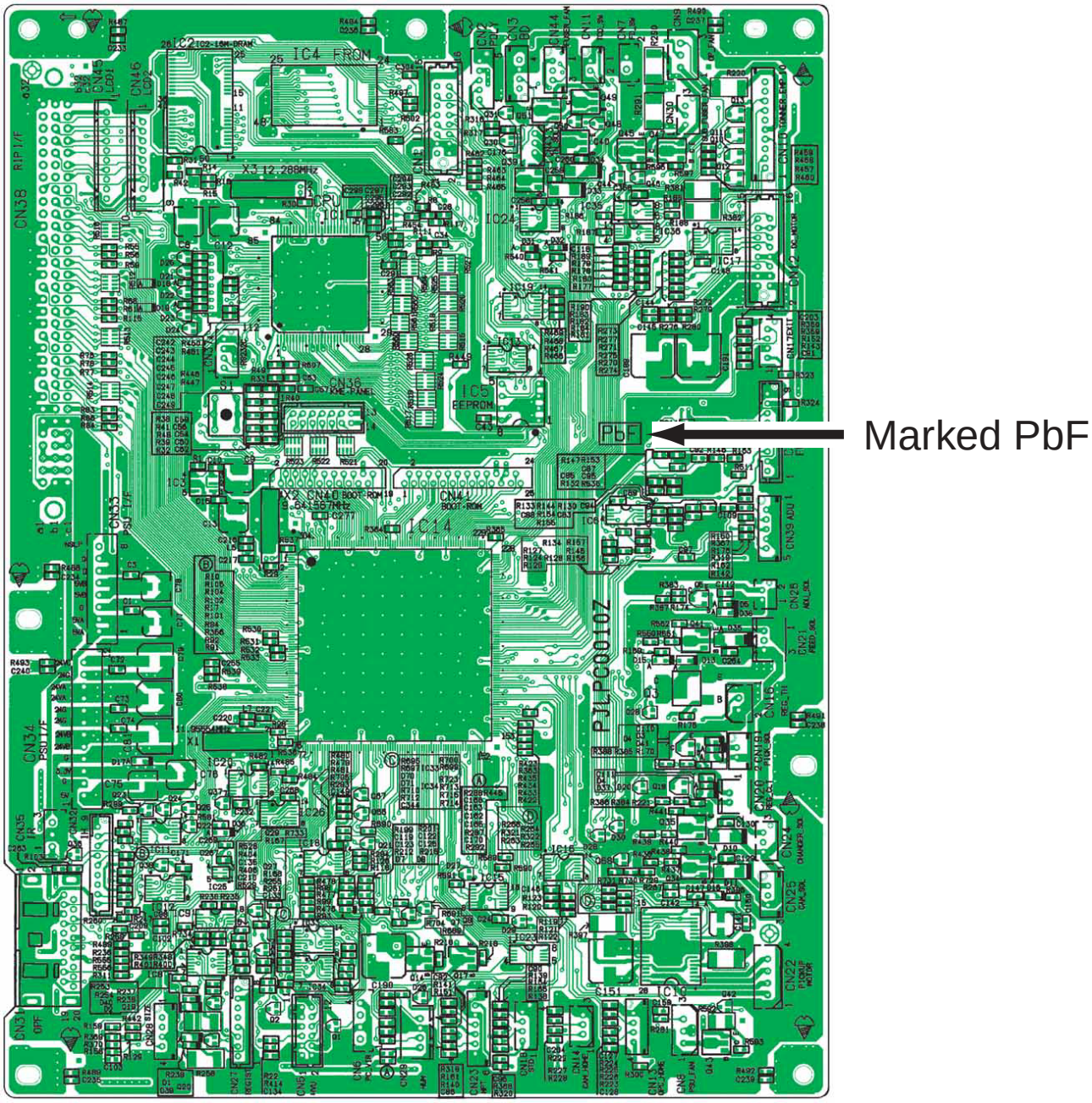


2.2.2. ROM Board

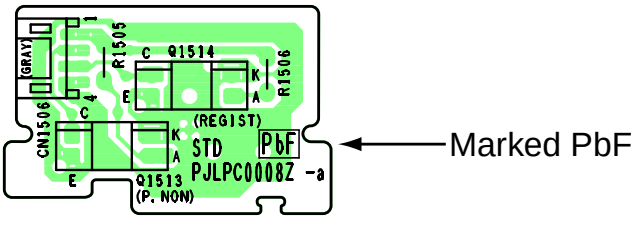
(Top View)



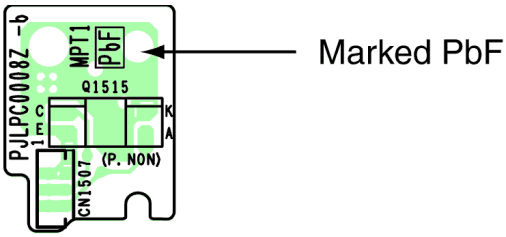
2.2.3. Engine Control Board



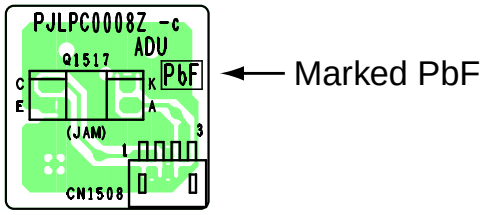
2.2.4. Paper Empty/Registration Sensor Board



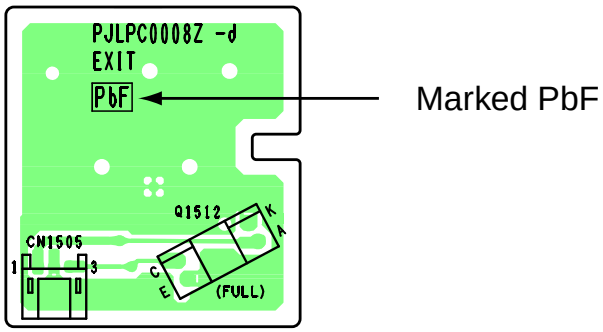
2.2.5. Multi-purpose (MPT) Paper Detection Sensor Board



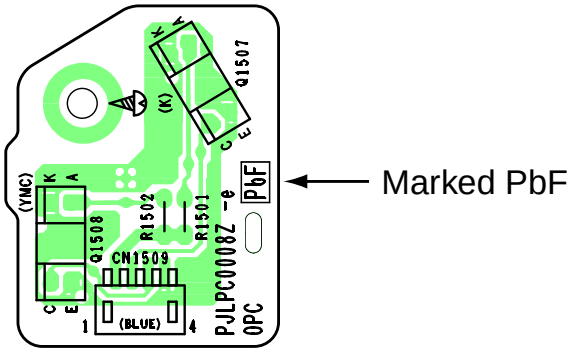
2.2.6. ADU Jam Detection Sensor Board



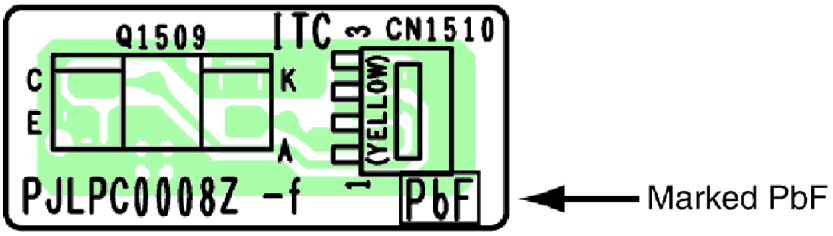
2.2.7. Paper Full Sensor Board



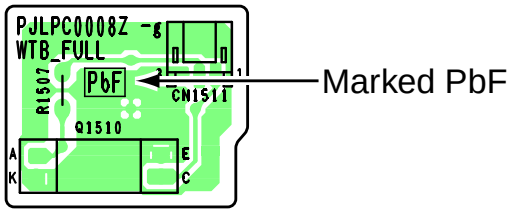
2.2.8. OPC Cam Home Sensor Board



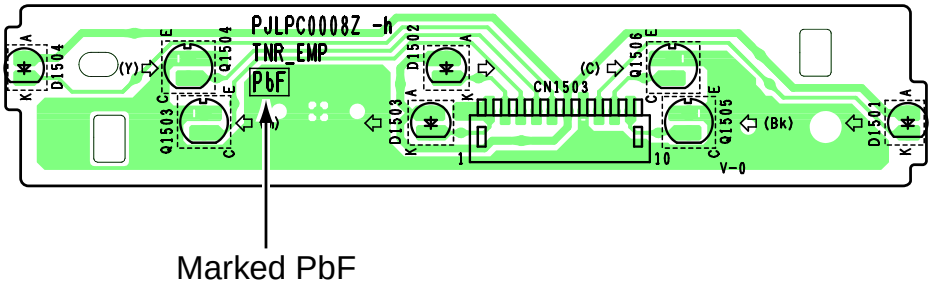
2.2.9. Accumulator Cam Home Position Sensor Board



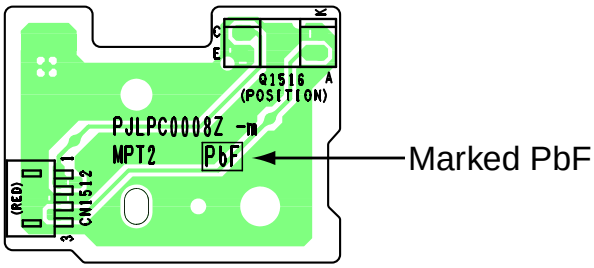
2.2.10. Waste Toner Full Detection Board



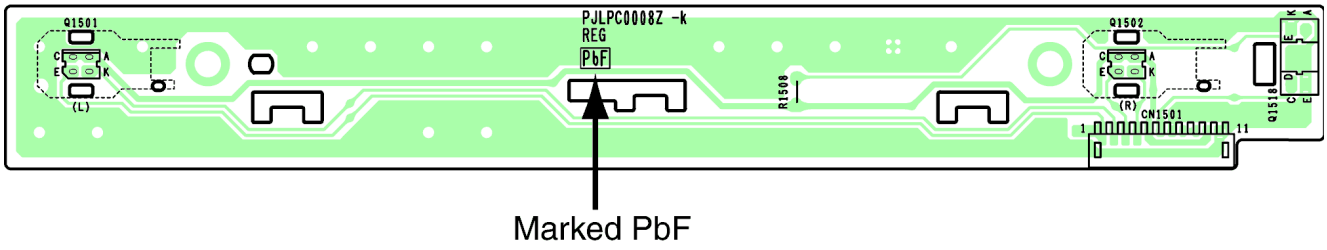
2.2.11. Toner Empty Sensor Board



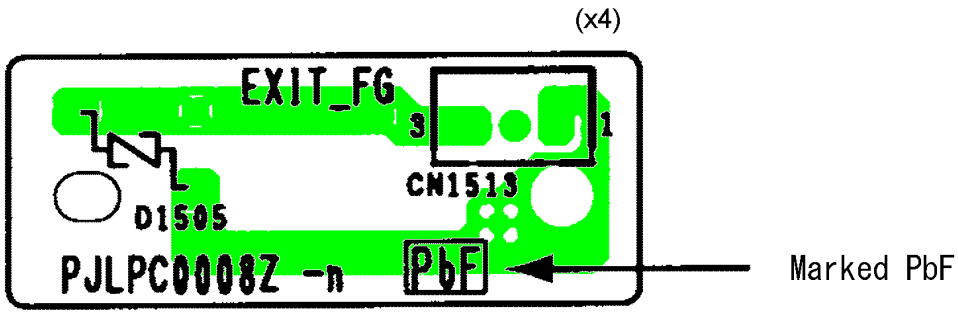
2.2.12. Multi-purpose (MPT) Home Position Sensor Board



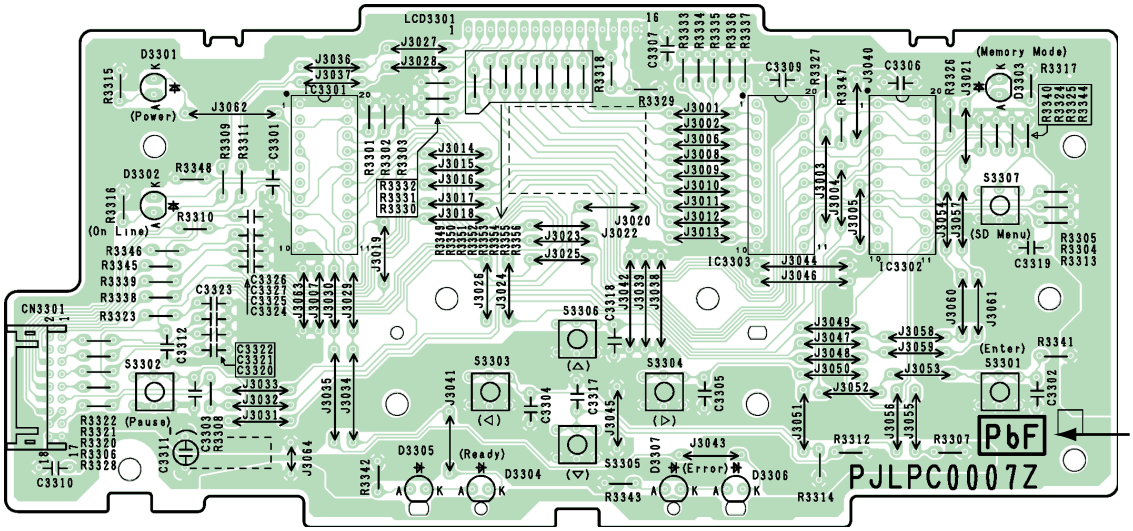
2.2.13. Color Registration Sensor Board



2.2.14. Exit FG Board



2.2.15. LCD Board



3 Installation, Setup, and Repacking

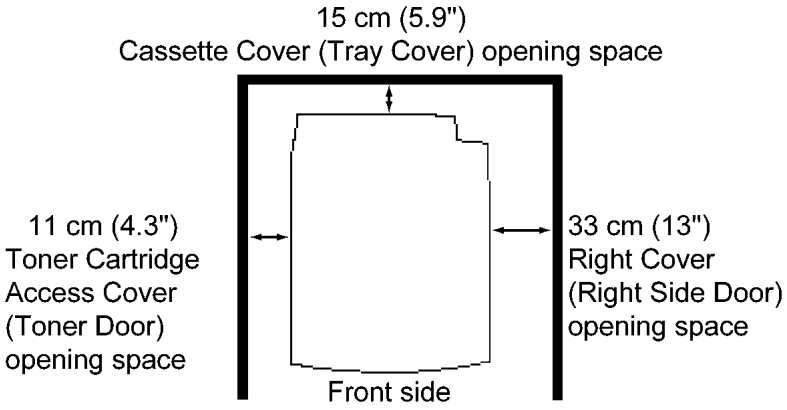
3.1. Installation Requirements

3.1.1. Environment

1. Temperature Range :10 °C - 32.5 °C (50 °F - 90.5 °F) (Temperature fluctuation ± 10 °C per hour or less)
2. Humidity Range :20% RH - 80% RH (Humidity fluctuation ± 20 °C per hour or less)
3. Weight : Gross; Approx. 33 kg (72.77 lbs.), Net; Approx. 30 kg (66.15 lbs) excluding packing material
4. Place the unit on a stable, level surface.
5. Do not install the unit under the following conditions.
   a. Extremely high or low temperature
   b. Extremely high or low humidity
   c. Direct exposure to sunlight
   d. Areas of high dust concentration
   e. Areas of poor ventilation
   f. Areas exposed to chemical fumes
   g. Areas with extreme vibration
   h. Directly in air conditioning flow

3.1.2. Minimum Space Requirements

1. Right : 33 cm (13")
2. Left : 11 cm (4.3")
3. Rear : 15 cm (5.9")



Note:

When you install a consumable component or replace it with a new one, additional space may be required.

3.2. Setup

3.2.1. Removing the Packing Material

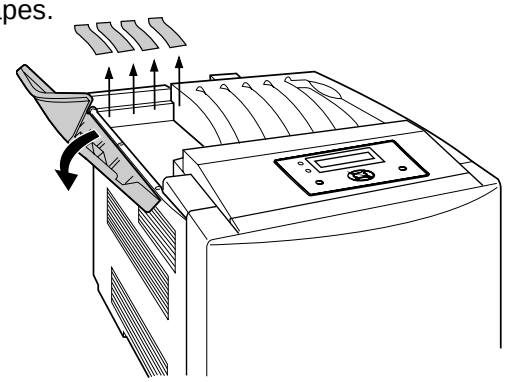
1. Remove the plastic bag from the printer.
2. Remove any adhesive tape.

Note:

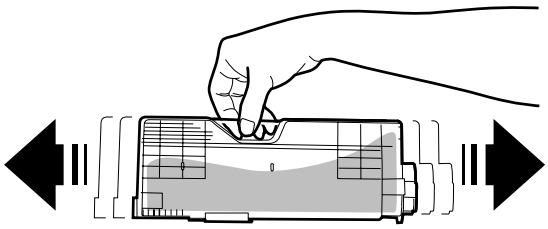
Please do not throw away the packing materials. They may be required to ship or transport the printer. To provide optimum print quality, the unit must be kept upright and level at all times.

3.2.2. Installing the Toner Cartridge

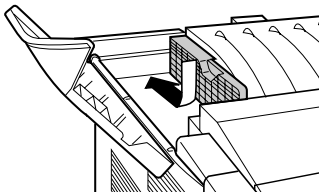
1.Open the toner cartridge access cover (toner door) and remove the sealing tapes.

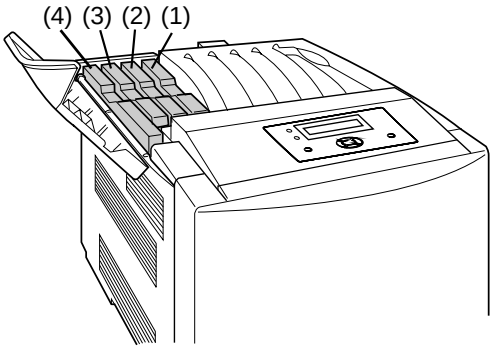


2.Open the plastic bags and take out the toner cartridges. Shake the toner cartridges several times.



3.Insert the toner cartridges in the appropriately labeled slots. From right to left, the order of the color toner cartridges is Black (1), Cyan (2), Magenta (3), Yellow (4).

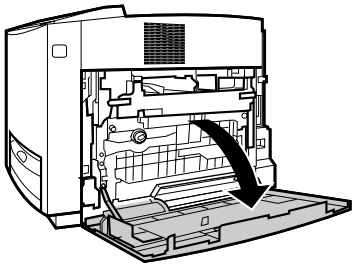




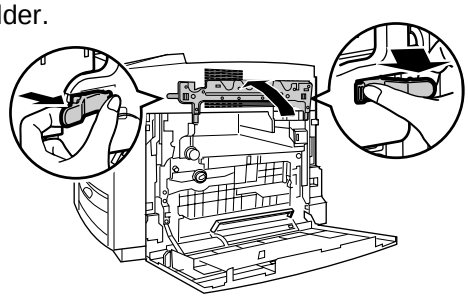
4.Close the toner cartridge access cover (toner door).

3.2.3. Installing the Print Cartridge

1.Open the right cover (right side door).

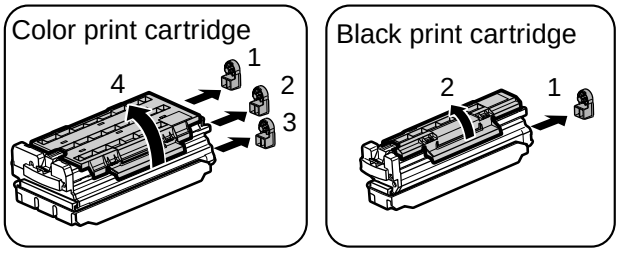


2.Unlock and open the print cartridge holder.

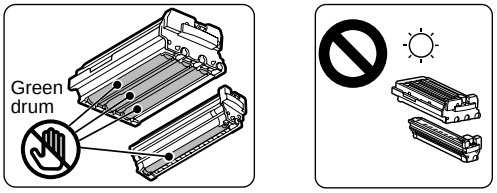


3.Open the plastic bags and take out the print cartridges.

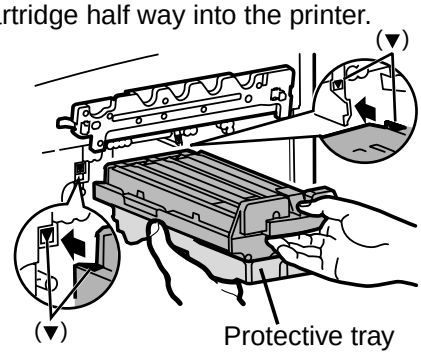
4.Remove the seal covers.



Note:
To prevent damage to the print cartridge,
- Do not touch the green drum surface.
- Do not expose to light for more than 45 sec.
- Do not expose to direct sunlight.

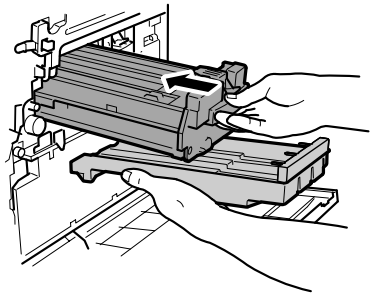


5.Holding the color print cartridge with the protective tray, match the arrow marks (▼) then insert the color print cartridge half way into the printer.

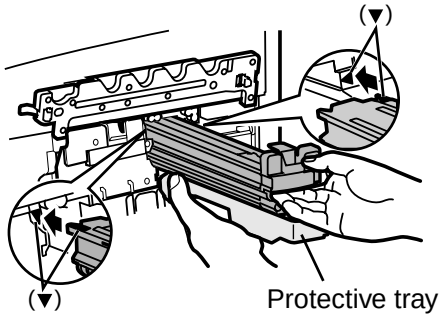


6.Firmly push the color print cartridge until it snaps into place.

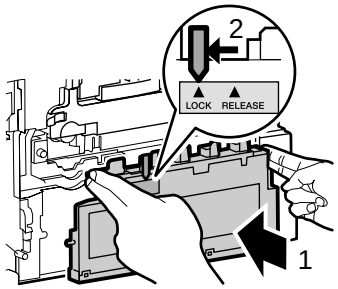
- Store the protective tray, seal covers, packing materials and cartons for repacking in future.



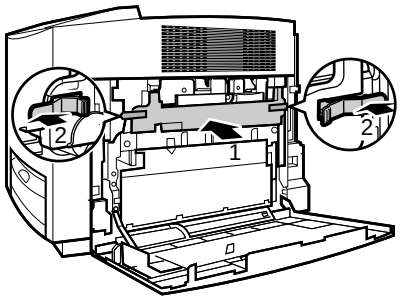
7.Repeat steps 4 - 6 for the black print cartridge.



8.Install the waste toner cartridge (1) and slide the green lever (2).



9.Close the print cartridge holder until it clicks (1) and locks it (2).



10.Close the right side cover (door).

3.3. Repacking

Prepare the unit before shipping.

Note:

It is highly recommended that users keep the original carton and All packing materials. Please follow these instructions when moving the printer.

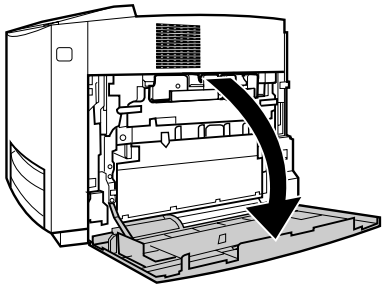
- Please use the original carton and all of the original packing material.
- Improper repacking of the printer may result in a charge to repair the unit or a cleaning charge to remove spilled toner.
- Since the printer uses dry toner, extreme care must be taken when handling. The printer should be handled in the upright (vertical) position.

Material Required

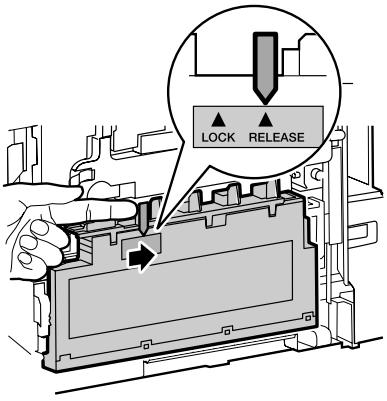
- Original carton and packing materials
- Newspaper or drop cloth
- Shipping tape and scissors

1 Turn off the printer, remove the power code and all interface cables.

2 Open the right cover (right side door).

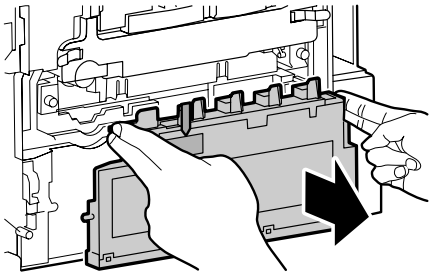


3 Slide the green lever for the waste toner cartridge to the right (RELEASE).

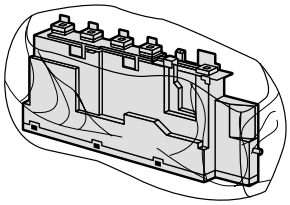


4 Remove the waste toner cartridge.

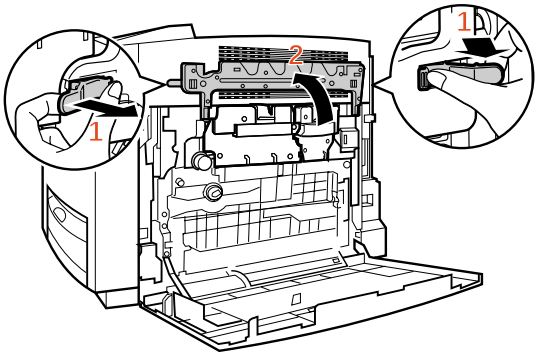
- Be sure the green lever is in the RELEASE position so that upper openings to waste toner cartridge are completely closed.



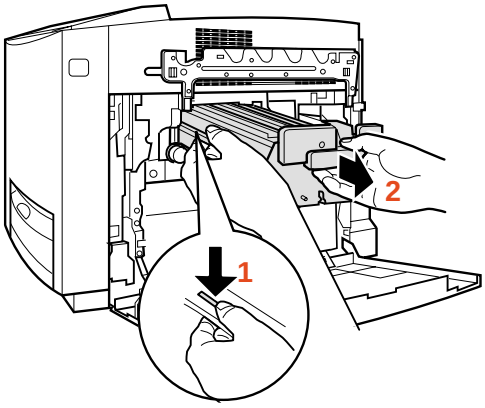
5 Insert the waste toner cartridge into a plastic bag and seal the end of the bag tightly.



6 Unlock the two levers (1) and open the print cartridge holder (2).

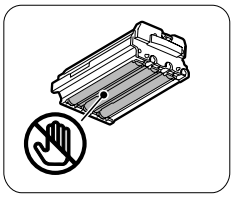


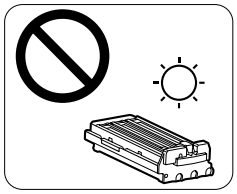
7 Pull out the color print cartridge halfway and remove it (2) while pressing the green stopper (1) on the left side.



Note:

- To prevent damage to the print cartridge;
  - Do not touch the green drum surface.
  - Do not expose to light for more than 45 minutes.
  - Do not expose to direct sunlight.





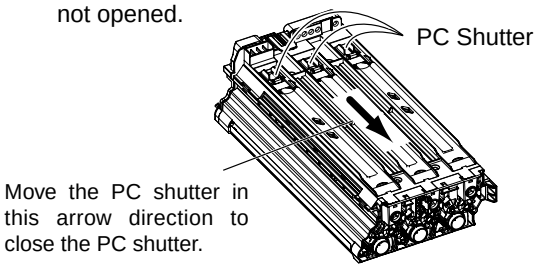
8 Close the PC shutter and wipe off any loose toner on the color print cartridge using a toner vacuum. Do not use a standard office vacuum; the toner will not be retained by typical vacuum dust collectors.

Caution 1:

If replacing the upper seal cover though the toner is on the color print cartridge, the toner will be scattered when removing the upper seal cover. The scattered toner may be attached to the OPC drum and the poor print quality will be caused.

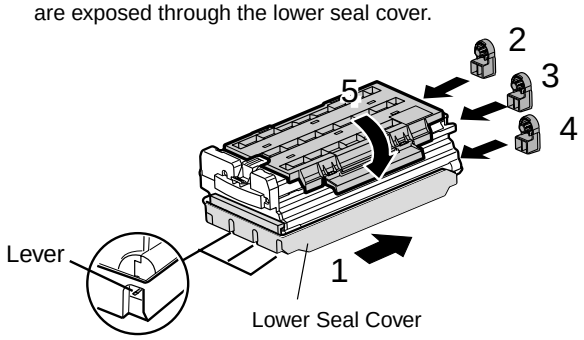
Caution 2:

If the print cartridge is wiped using a toner vacuum when the PC shutter is opening, the toner in the print cartridge is sucked and charged. This charge is discharged to the OPC drum and the OPC drum may be damaged. Wipe off the toner on the print cartridge using care that the PC shutter is not opened.

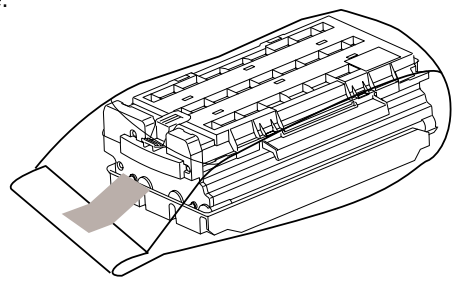


9 Replace the protective tray (1), upper seal covers (2-4) and protective caps (5).

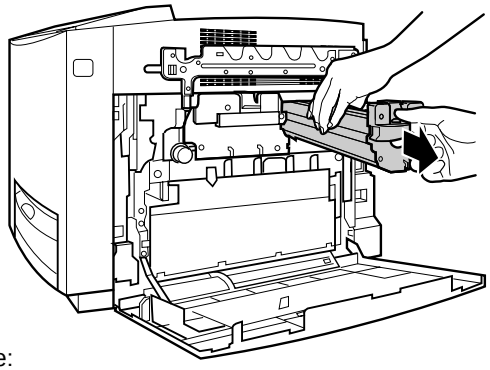
- Be sure the three sealing levers of the print cartridge are exposed through the lower seal cover.



10 Insert the color print cartridge into the black plastic bag and seal the end of the bag tightly with adhesive tape.

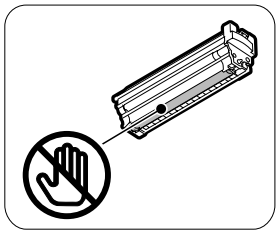


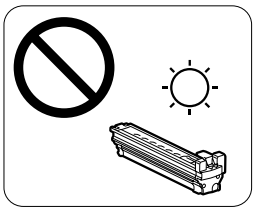
11 Pull out the black print cartridge.



Note:

- To prevent damage to the print cartridge;
  - Do not touch the green drum surface.
  - Do not expose to light for more than 45 minutes.
  - Do not expose to direct sunlight.





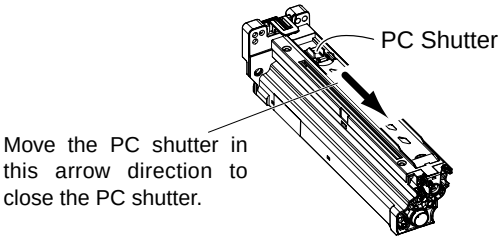
12 Close the PC shutter and wipe off any loose toner on the black print cartridge using a toner vacuum. Do not use a standard office vacuum; the toner will not be retained by typical vacuum dust collectors.

Caution 1:

If replacing the upper seal cover though the toner is on the black print cartridge, the toner will be scattered when removing the upper seal cover. The scattered toner may be attached to the OPC drum and the poor print quality will be caused.

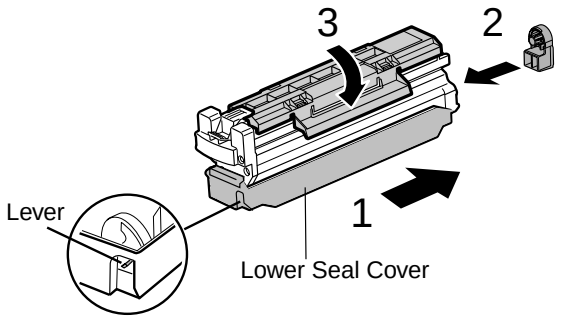
Caution 2:

If the print cartridge is wiped using a toner vacuum when the PC shutter is opening, the toner in the print cartridge is sucked and charged. This charge is discharged to the OPC drum and the OPC drum may be damaged. Wipe off the toner on the print cartridge using care that the PC shutter is not opened.

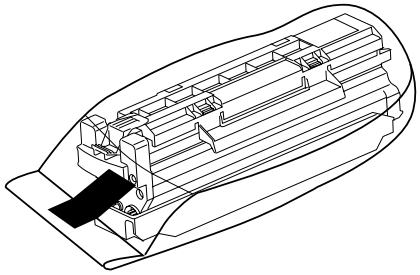


13 Replace the protective tray (1), upper seal cover (2) and protective cap (3).

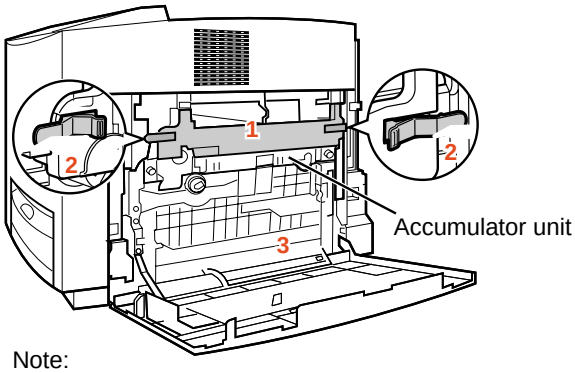
- Be sure the sealing lever of the print cartridge is exposed through the lower seal cover .



14 Insert the black print cartridge into the black plastic bag and seal the end of the bag tightly with adhesive tape.



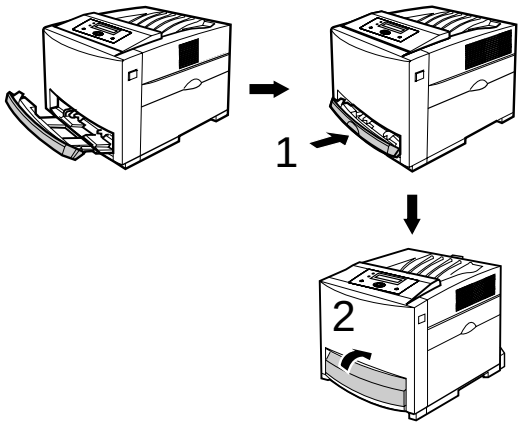
15 Close the print cartridge holder [(1)-(2)] and lock it. Close the right cover (3) (right side door).



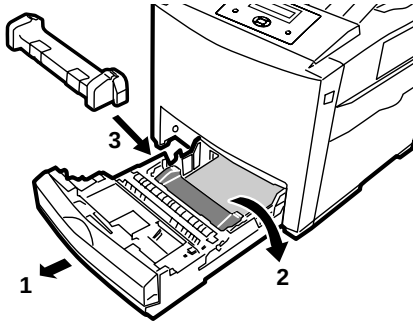
Note:

- Be sure the accumulator unit is kept in the printer.

16 Remove the media from the multi-purpose tray. Push the multi-purpose tray (1) and close the tray cover (2).

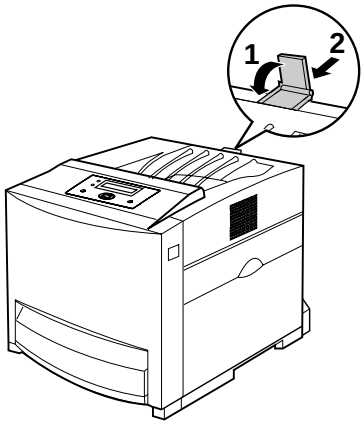


17 Pull the media tray (1) out of the printer. Remove the media (2) from the media tray and install the tray pad (3) into the media tray.



18 Install the media tray into the printer.

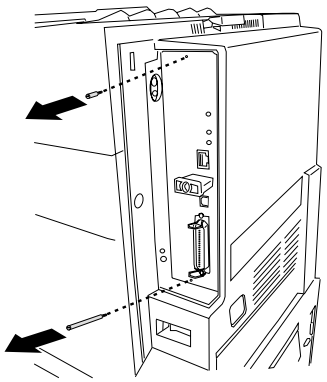
19 Close (1) and insert (2) the paper support into the printer.



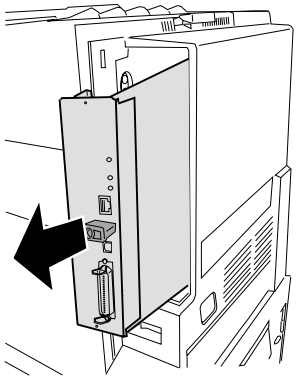
20 Confirm all toner cartridges are completely installed in the printer.

If the hard disk drive option has been installed in the printer, confirm the hard disk drive is fastened with two screws provided. If it is not installed, proceed to step 26.

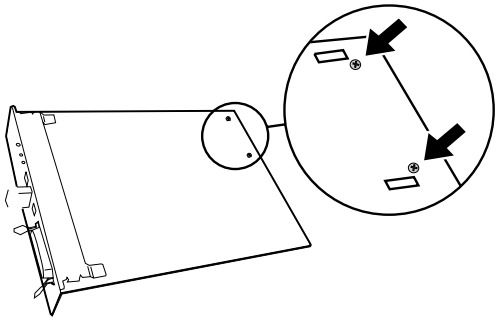
21 Remove the two thumb screws from the main control board.



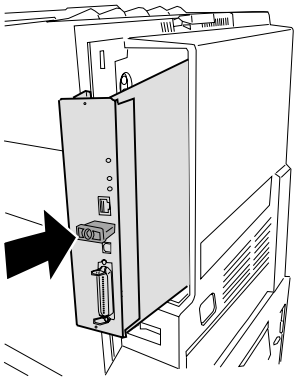
22 Pull out the main control board while holding the green handle.



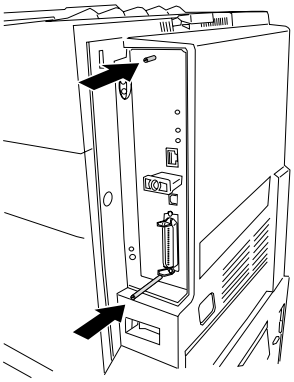
23 Reconfirm the hard disk drive is fastened with two screws. If it is not fastened, fasten it with two screws.



24 Install the main control board back into the printer, as shown.



25 Tighten the two thumb screws.



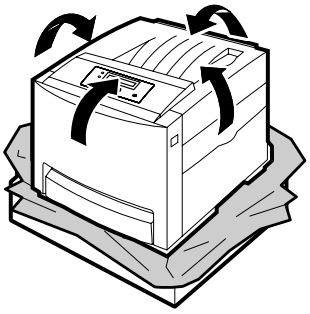
26 Repack the printer in the original shipping box.

- Make sure that you keep the printer upright and level when moving.

SAFETY CAUTION

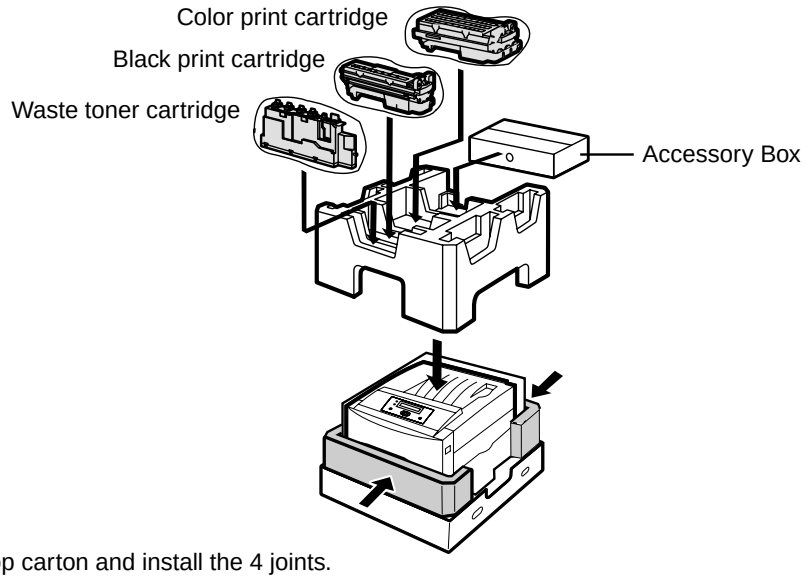
- The printer weighs about 30 K g (66 lbs.).
  It must be handled by two people.

(1) Place the printer in the plastic bag on the lower cushion and wrap the printer with the plastic bag.

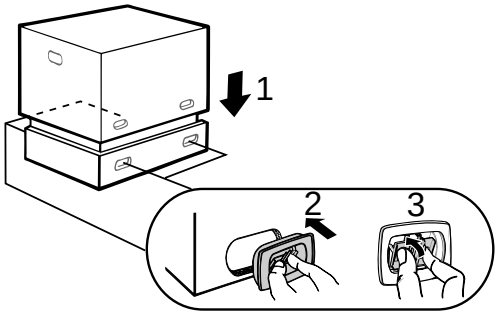


(2) Place the middle on the lower cushion, upper cushion on the printer and middle cushion.

(3) Place the waste toner cartridge, black print cartridge and color print cartridge and accessory box on the upper cushion.



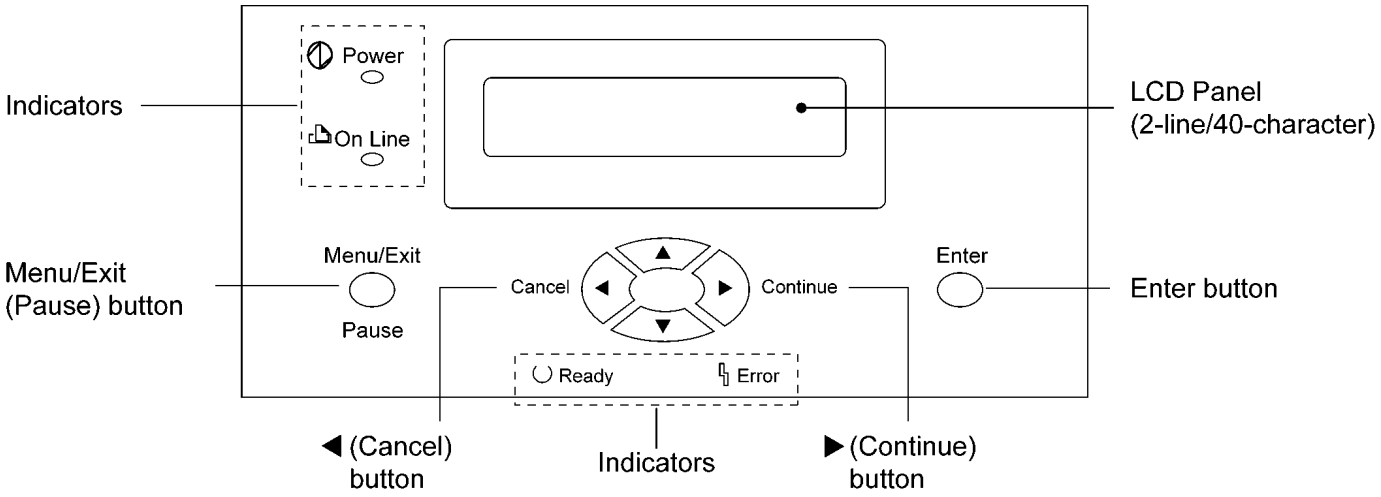
(4) Place the top carton and install the 4 joints.



4 User Mode Operation

4.1. User Mode Printer Panel Operation

4.1.1. Panel Operation

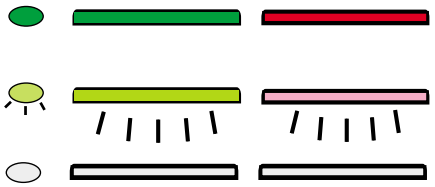


Button Operation

Button	Operation
Menu/Exit **Pause**	While **Ready** is displayed on the LCD, pressing this button will allow you to enter the Menu mode.
	In the Menu mode, pressing this button exits the Menu mode and Ready is displayed on the LCD.
	When **Processing** or **Printing** is displayed in the upper line of the LCD, pressing this button will allow you to pause printing. While **Pause printing** is displayed on the LCD, pressing this button will allow you to resume printing.
	Pressing this button displays the previous item of the same level menu.
	Pressing this button decreases the numerical value one by one. Holding down this button will allow you to scroll faster.
	Pressing this button displays the next item of the same level menu.
	Pressing this button increases the numerical value of one by one. Holding down this button will allow you to scroll faster.
Continue	Pressing this button goes to the lower level menu. If the lower level menu does not exist, the action will be ignored.
	When performing the manual duplex printing function, after even pages are printed, odd pages are printed by pressing this button.
	When **LOAD Letter** or **Memory Overflow,** etc. appears on the LCD, you can print the current job anyhow by pressing this button. However, the print may not be proper.
Cancel	Pressing this button goes to the upper level menu. If the upper level menu does not exist, the action will be ignored.
	While the printer prints, pressing this button will allow you to stop printing or cancel processing the current job.
Enter	Pressing this button goes to the lower level menu. The selection is activated by pressing this button if the lower level menu does not exist.
	When the life of the Accumulator Unit, Fuser Unit or Transfer Roller is worn out in the middle of printing, hold down this button more than 3 seconds after replacing the component. The remaining life is reset and the replacement error will be cleared.

4.1.2. LED Indicator

Three indicators show the following printer's status:



Indicator	Printer Status
Power	Printer is turned on.
Power	Printer is in the Power Save mode.
Power	Printer is turned off.
On Line	Printer is ready for printing. (Printer warms up and starts printing automatically when it receives print data.)
On Line	Printer is in the Off Line.
Ready Error	Printer is in the normal condition. Printer is not in error conditions.
Ready Error	Printer is receiving data, printing or data remains in the memory. Printer is in the Menu mode.
Ready Error	Printer recoverable errors (media jam, media empty, etc.) has occurred.
Ready Error	An internal error (Call for Service Error) has occured.

4.2. User Mode Main Menu

This section covers the basic operation of this model.

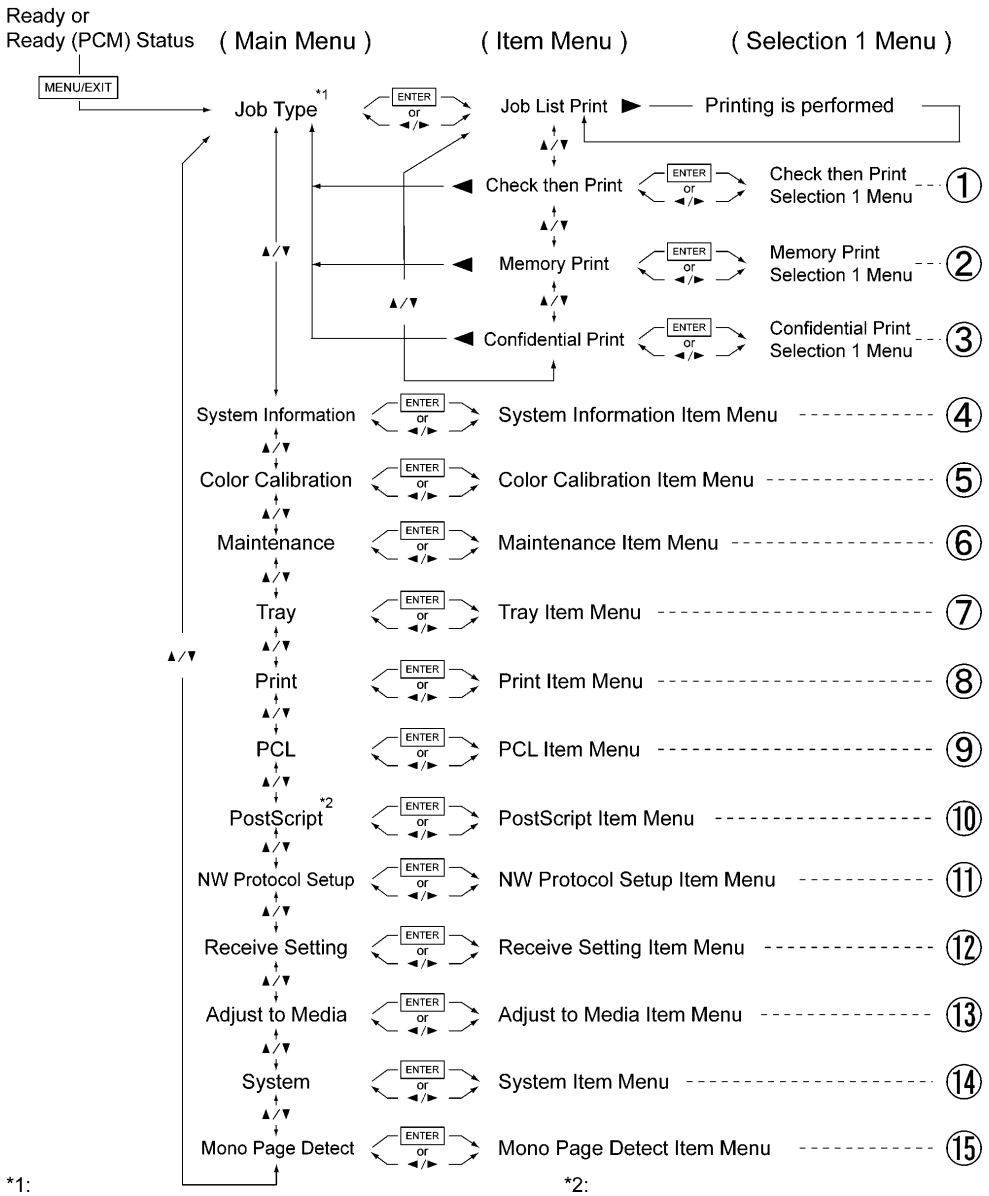
1 Plug in the power cord and connect an interface cable to the laser printer.
2 Turn on the power switch. The LCD displays “Initializing”, then “Ready or Ready (PCM*)”
If the Optional Hard Disk Drive is installed, the LCD displays the “Initializing” and “HDD Accessing” alternately.
3 When Ready or Ready (PCM*) is displayed in the upper line of the LCD, press the Menu/Exit (Pause) button to enter the Menu Mode.

*: Print Count Manager is turned on.

The following chart shows all functions of MENU Mode that are displayed when selecting functions.

MENU/EXIT : Press the Menu/Exit (Pause) button. ◄ : Press the ◄ button. ◄/► : Press the ◄ or ► button.

ENTER : Press the Enter button. ► : Press the ► button. ▲/▼ : Press the ▲ or ▼ button.



*1:
The menu is displayed only when a Hard Disk Drive (option) is installed in the printer.

*2:
The menu is displayed only when a PS Upgrade Kit (option) is installed in the printer.

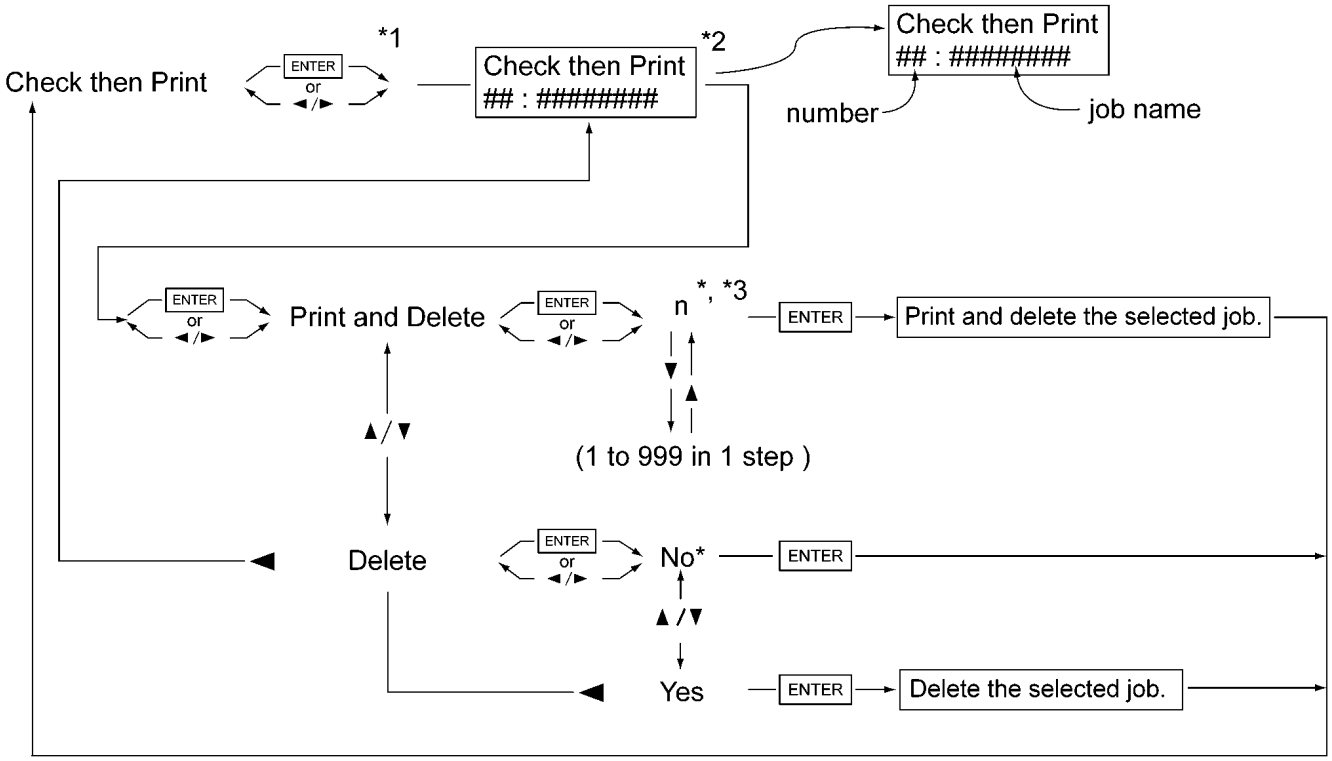
4.3. Check then Print Selection 1 Menu

① Check then Print Selection 1 Menu

* : Default
*1 : The " No Job Available " will be displayed when pressing the Eenter or ► button if there are no print job.

*2 : Job Name is displayed on the LCD.
(Example) 1:, 2:, 3:, etc. is displayed by pressing the ▲ or ▼ button.

*3 : The number of copies "n (digit set with the printer driver)" is displayed.



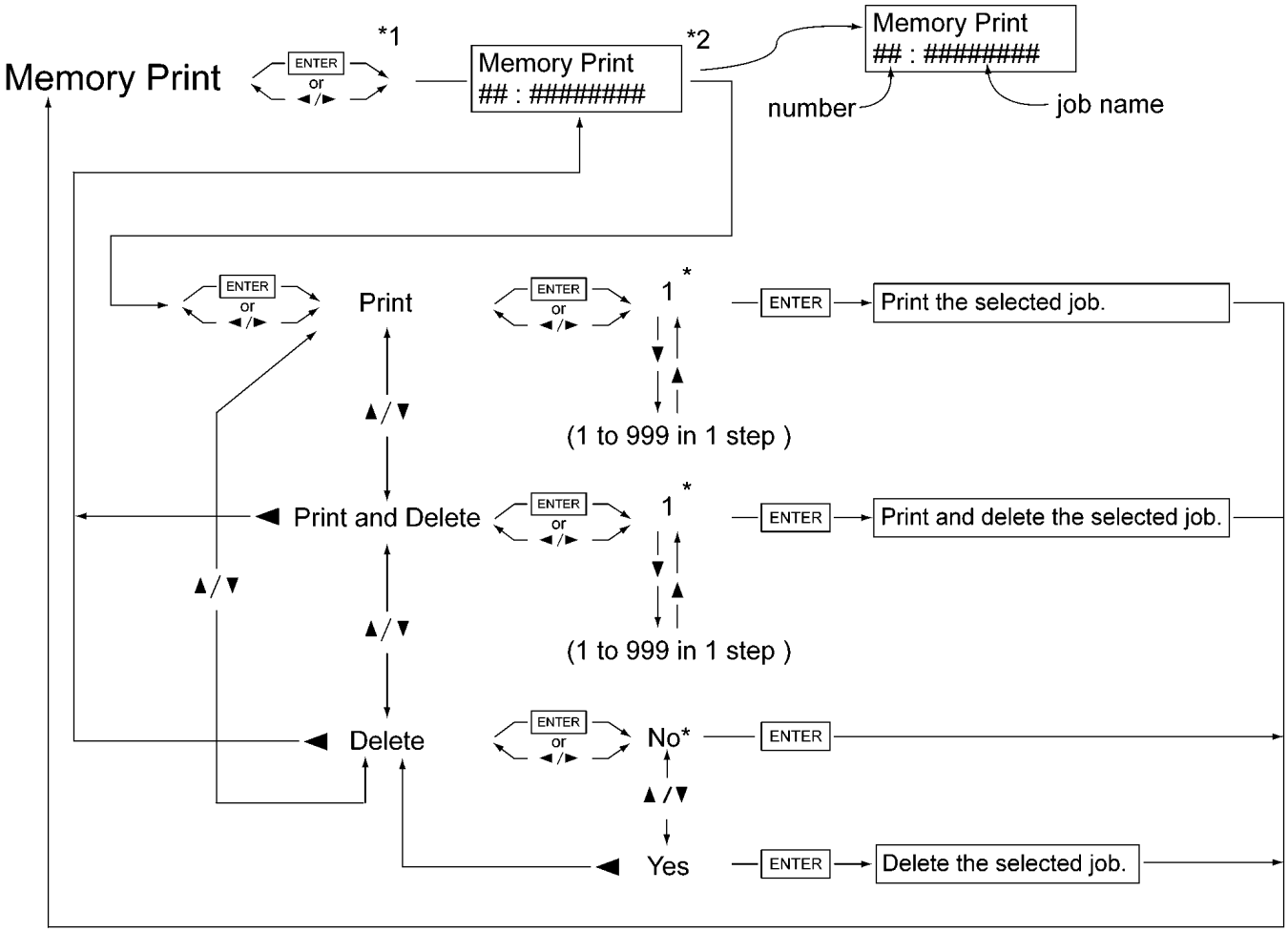
4.4. Memory Print Item Menu

② Memory Print Selection 1 Menu

* : Default

*1 : The " No Job Available " will be displayed when pressing the Enter or ► button if there are no print job(s).

*2 : Job Name is displayed on the LCD.
(Example) 1:, 2:, 3:, etc. is displayed by pressing the ▲ or ▼ button.



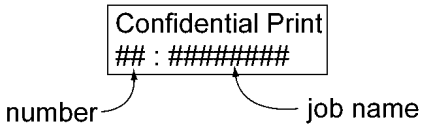
4.5. Confidential Print Selection 1 Menu

③ Confidential Print Selection 1 Menu

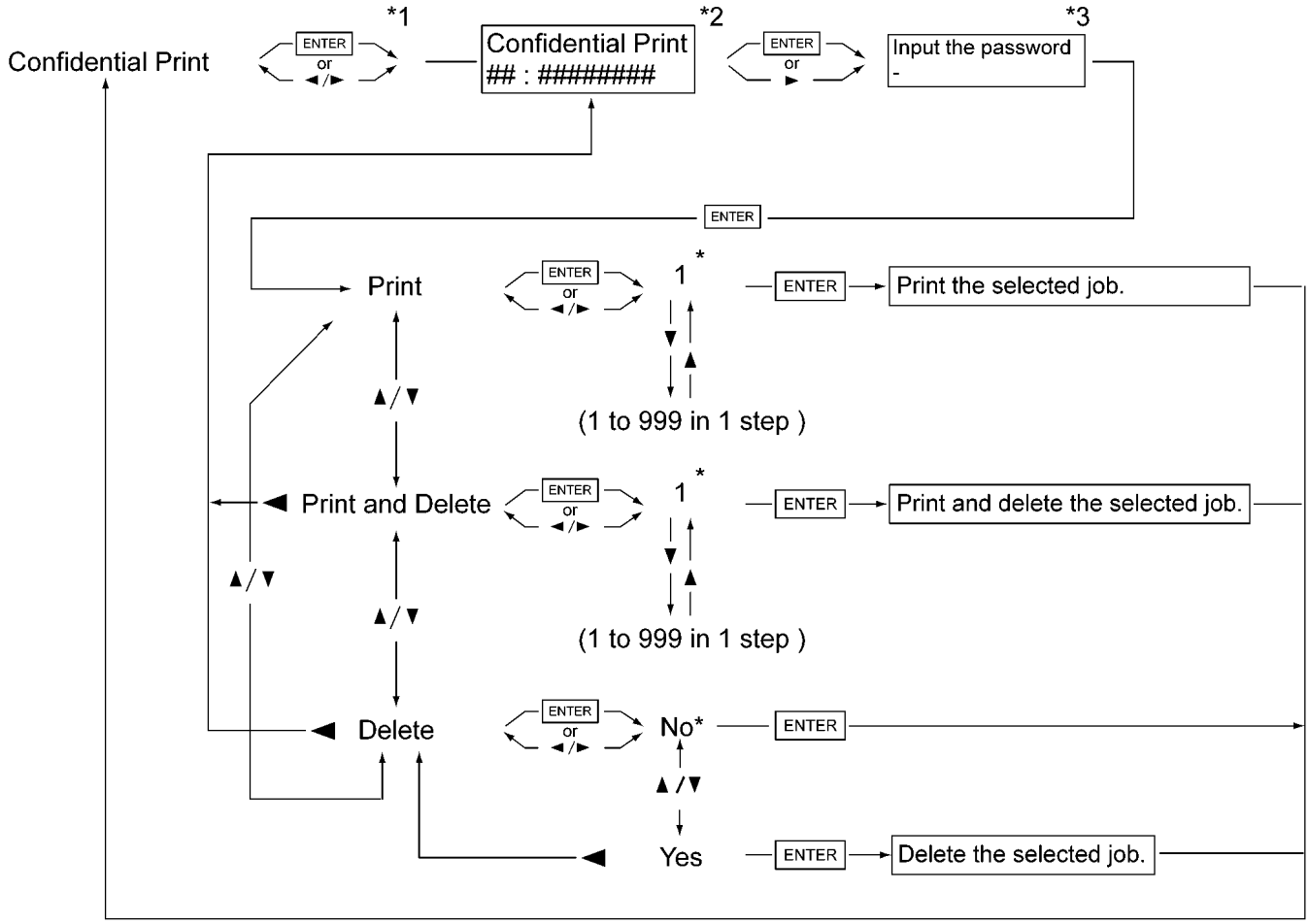
* : Default

*1 : The " No Job Available " will be displayed when pressing the Enter or ► button if there are no print job(s). Job Name is displayed on the LCD.

*2 : (Example) 1:, 2:, 3:, etc. is displayed by pressing the ▲ or ▼ button.

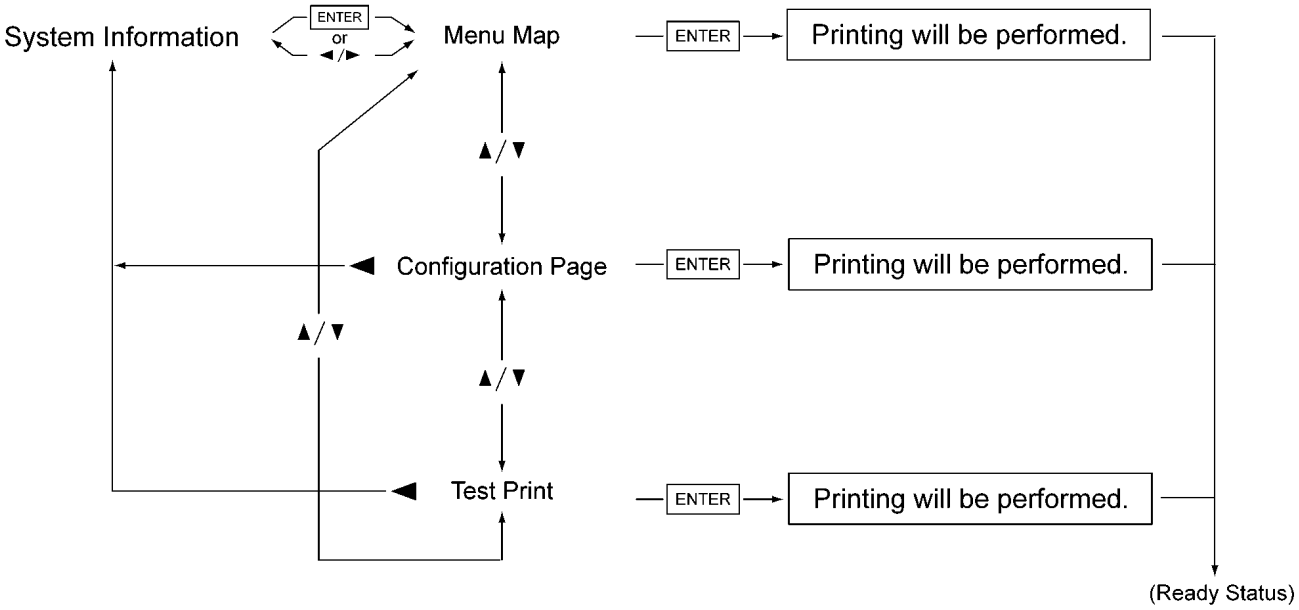


*3 : After selection, the password is checked.
Select the number by pressing the ▲ or ▼ button, and press the Enter button to fix it. By repeating this step, input all password numbers. After inputting the password, press the Enter button. If inputting the wrong password, the printer is returned to the previous status and the job name is displayed. After pressing the Enter or ► button, input all the password numbers again.
If inputting the wrong number while inputting the password, move the cursor using the ◄ or ► button and retry inputting the password.



4.6. System Information Item Menu

④ System Information Item Menu



4.7. Color Calibration Item Menu

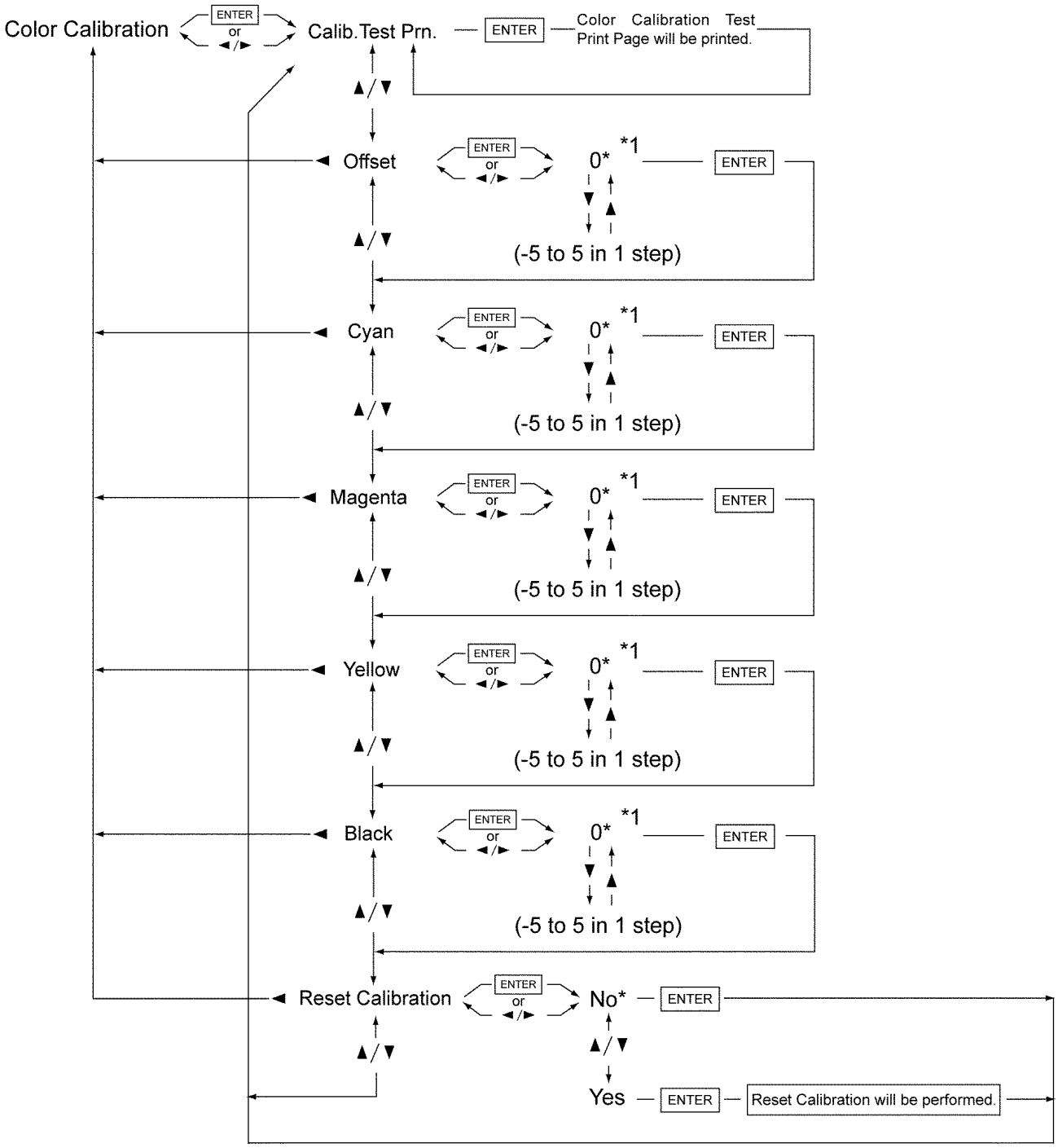
⑤ Color Calibration Item Menu

* : Default

*1: Setting a higher number provides darker colors and setting a lower number provides lighter colors.

Note

Calib. Test Prn. : Prints a Color Calibration Test Print Page with the current density settings.
Offset : Adjusts the density for all colors (Cyan, Magenta Yellow and Black).
Cyan/Magenta/Yellow/Black : Adjusts the density for each color independently.
Reset Calibration : Setting Yes resets the current settings back to the default settings.

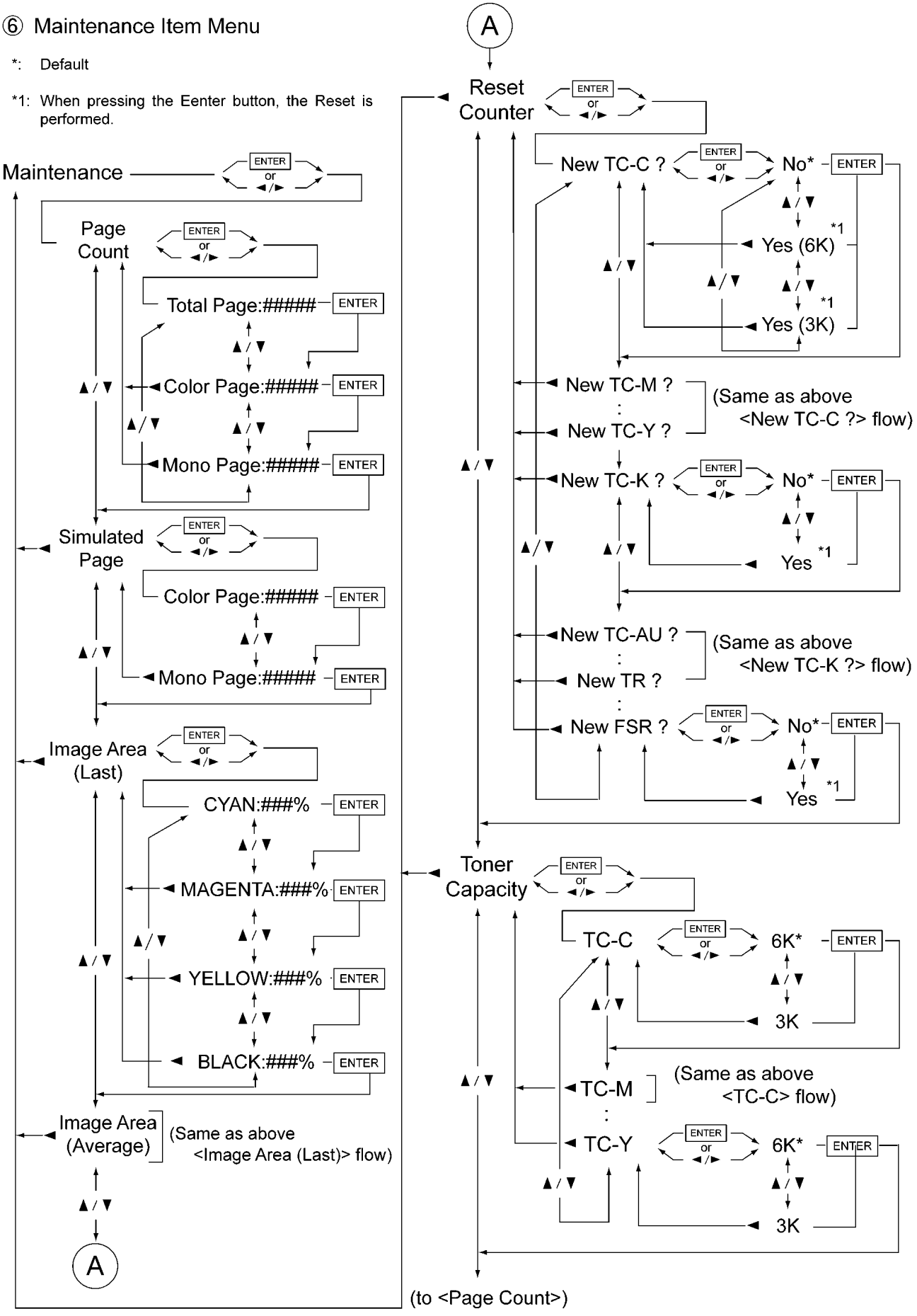


4.8. Maintenance Item Menu

⑥ Maintenance Item Menu

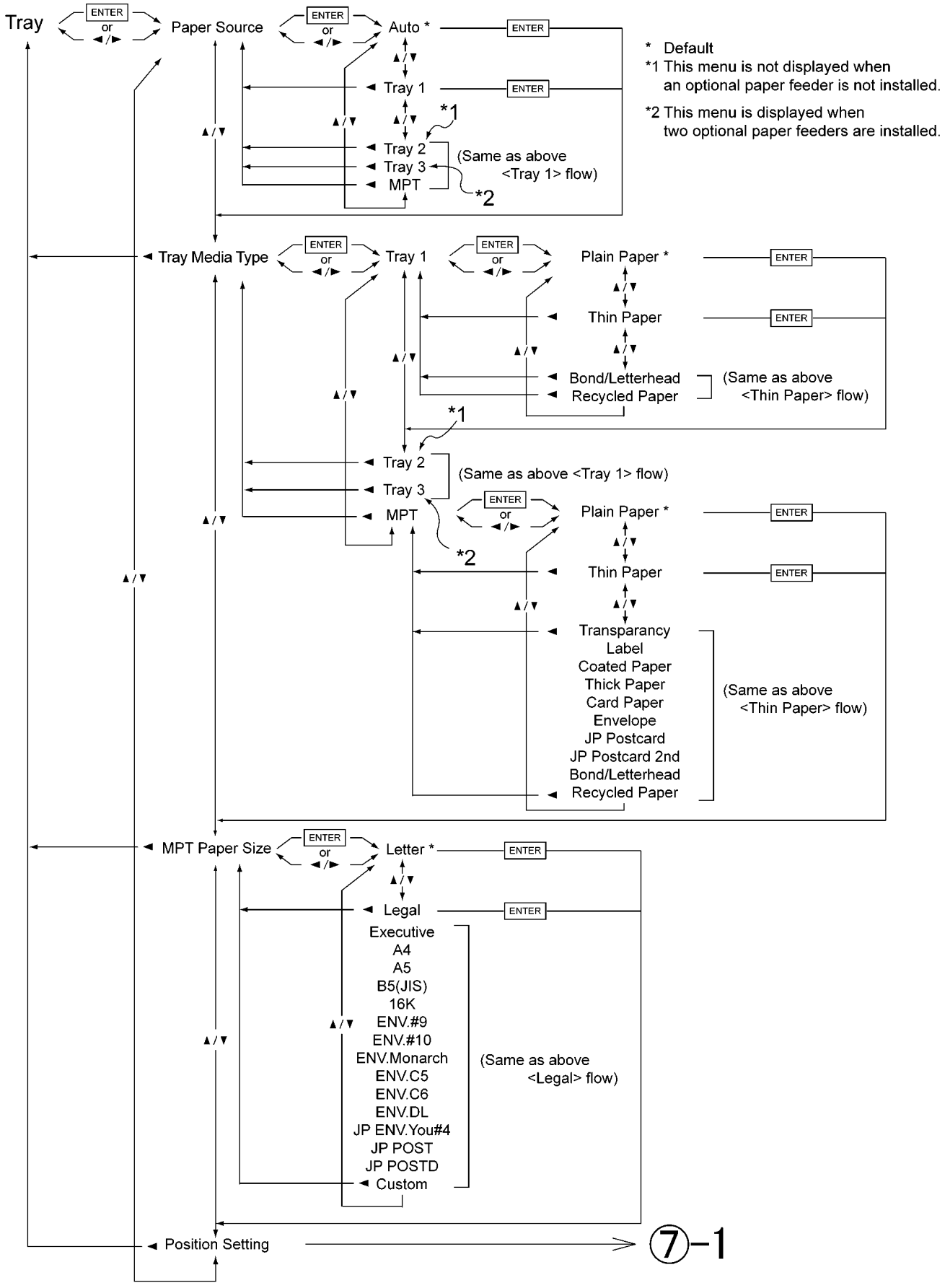
*: Default

*1: When pressing the Eenter button, the Reset is performed.



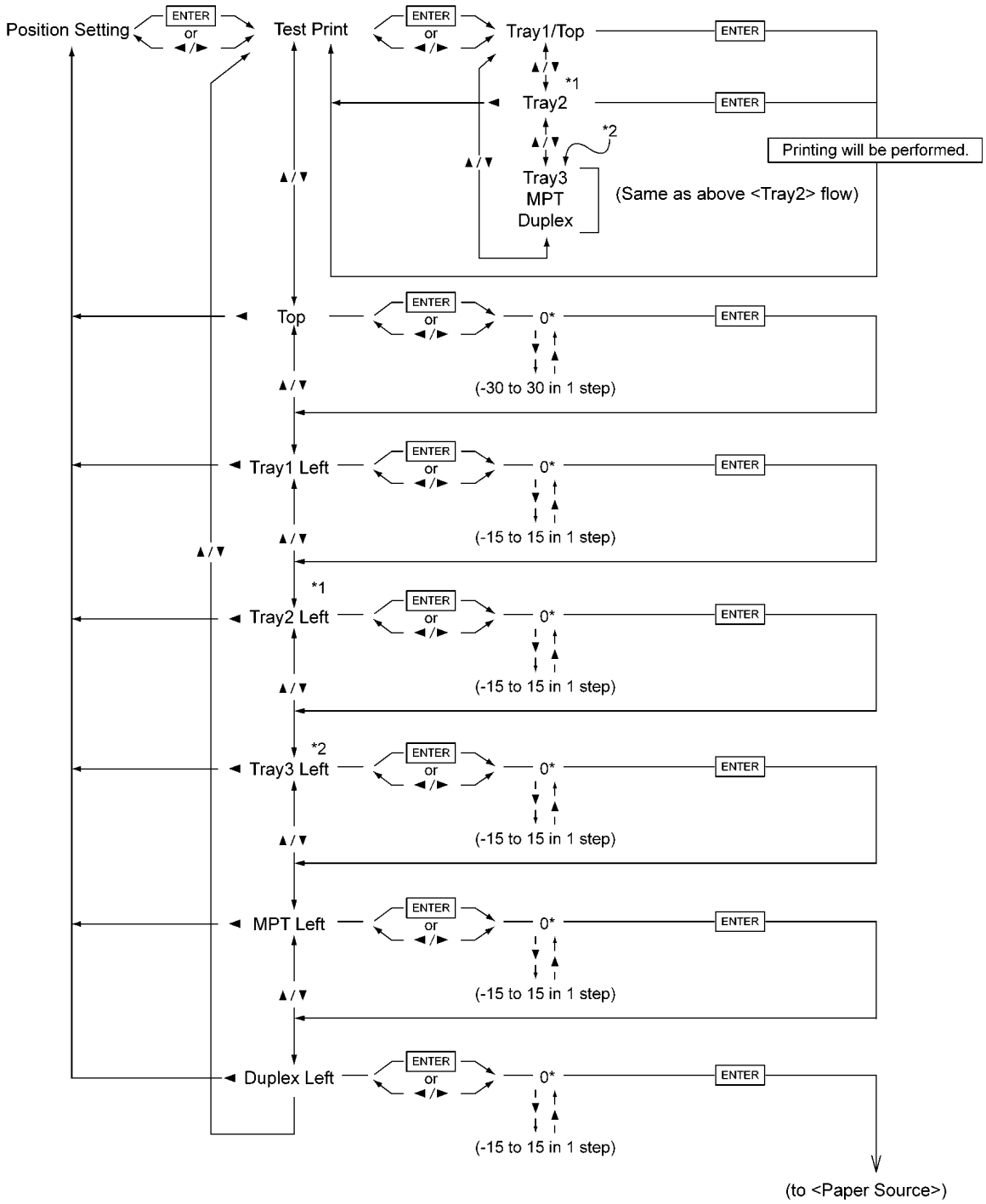
4.9. Tray Item Menu

⑦ Tray Item Menu



4.9.1. Position Setting Selection 1 Menu

⑦-1 Position Setting Selection 1 Menu

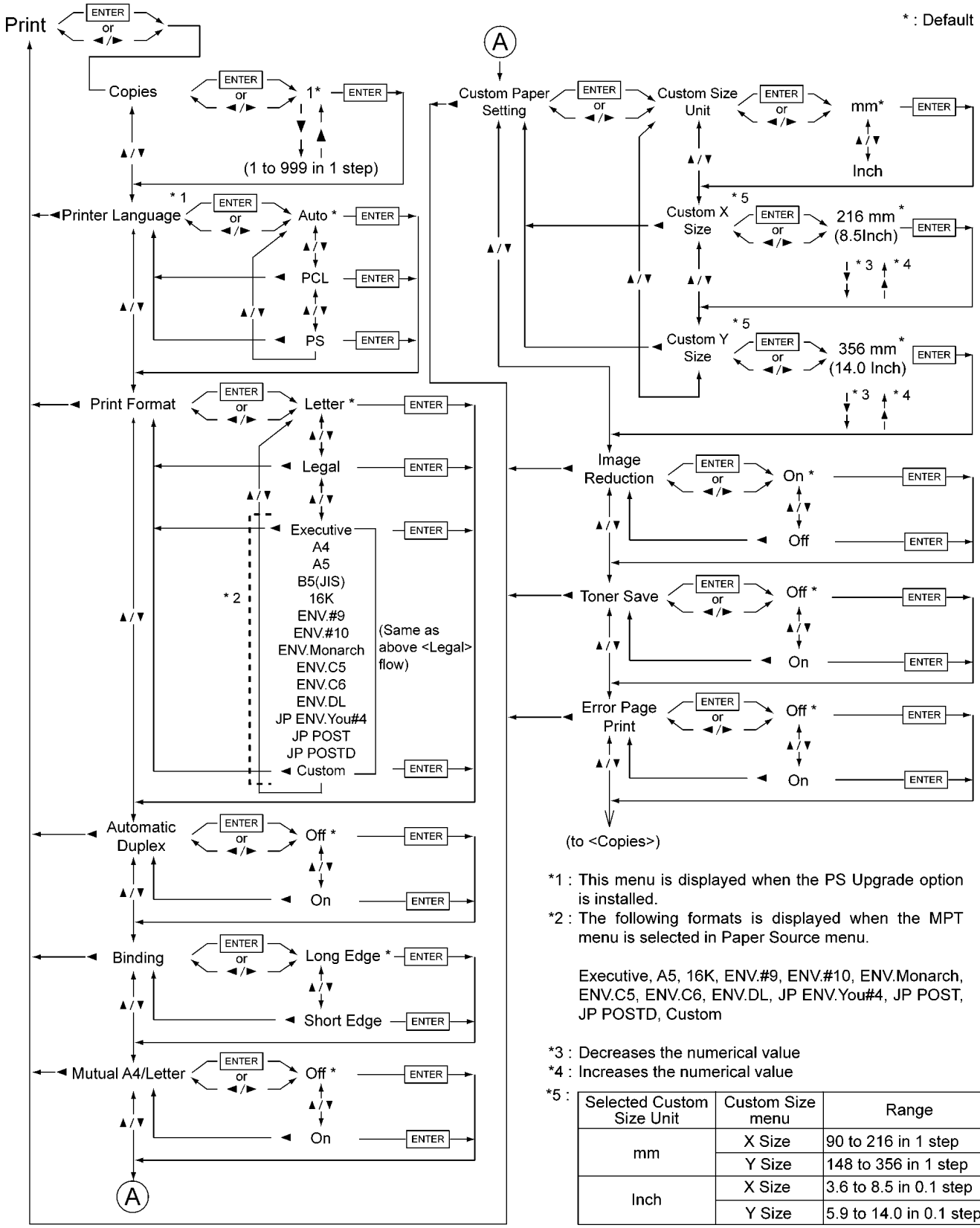


*1 This menu is displayed when an optional paper feeder is installed.

*2 This menu is displayed when two optional paper feeders are installed.

4.10. Print Item Menu

⑧ Print Item Menu



*1 : This menu is displayed when the PS Upgrade option is installed.

*2 : The following formats is displayed when the MPT menu is selected in Paper Source menu.

Executive, A5, 16K, ENV.#9, ENV.#10, ENV.Monarch, ENV.C5, ENV.C6, ENV.DL, JP ENV.You#4, JP POST, JP POSTD, Custom

*3 : Decreases the numerical value

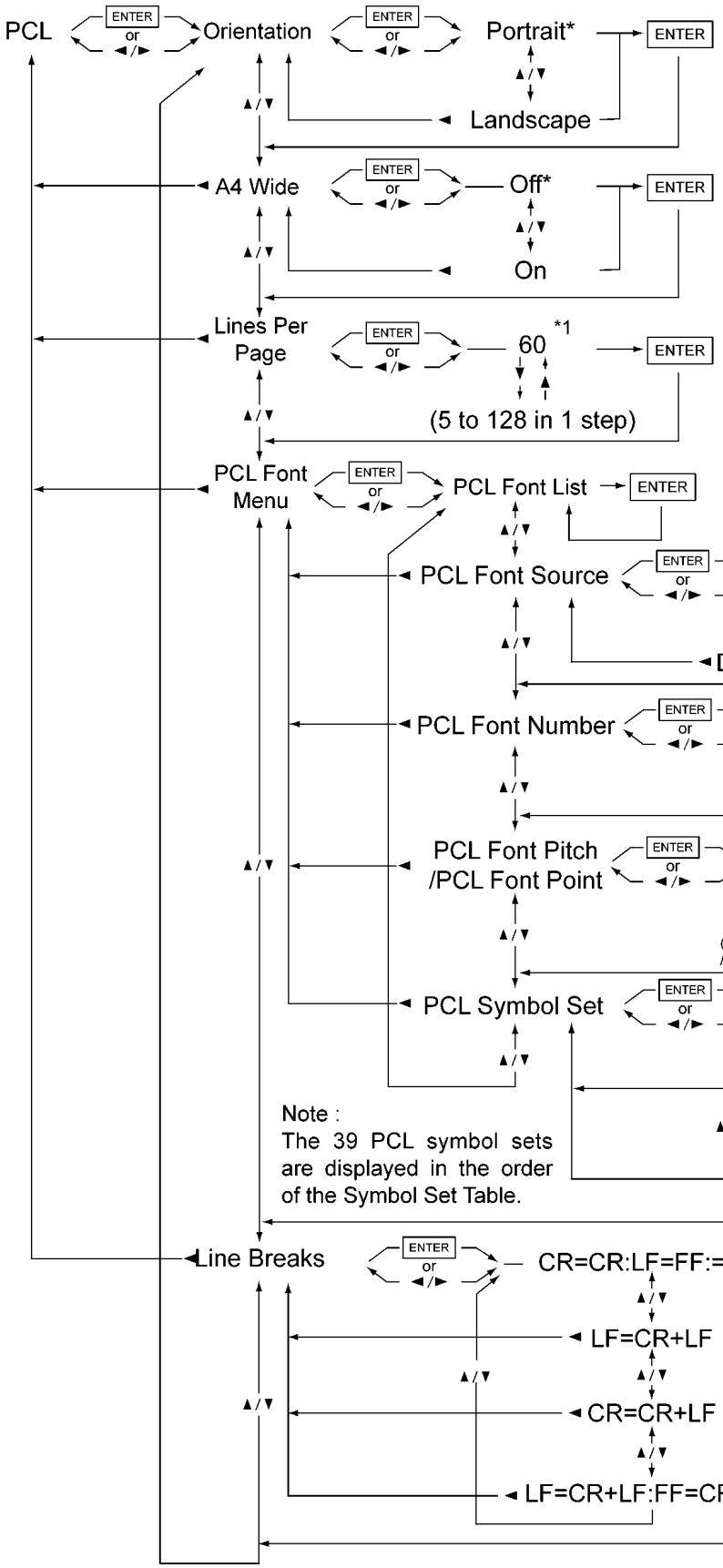
*4 : Increases the numerical value

*5 :

Selected Custom Size Unit	Custom Size menu	Range
mm	X Size	90 to 216 in 1 step
	Y Size	148 to 356 in 1 step
Inch	X Size	3.6 to 8.5 in 0.1 step
	Y Size	5.9 to 14.0 in 0.1 step

4.11. PCL Item Menu

⑨ PCL Item Menu



Note :
The 39 PCL symbol sets are displayed in the order of the Symbol Set Table.

* : Default

*1

This default varies depending on settings of Orientation menu and Print Format menu.

*2

If the download Font is not available, this menu is not displayed, and "Resident" is displayed.

Symbol Set Table

PC-8
PC-8D/N
PC-850
PC-852
PC-858
PC-TURKISH
PC-1004
WIN3.1 LATIN1
WIN3.1 LATIN2
WIN3.1 LATIN5
DESKTOP
PS TEXT
VENTURA INTL
VENTURA US
MS PUBLISH
MATH-8
PS MATH
VENTURA MATH
PI FONT
LEGAL
ISO-4
ISO-6
ISO-11
ISO-15
ISO-17
ISO-21
ISO-60
ISO-69
WIN3.0 LATIN1
WINBALT
MC TEXT
ROMAN-8
ROMAN-9
ISO LATIN1
ISO LATIN2
ISO LATIN5
ISO LATIN6
ISO LATIN9
PC775

4.12. PostScript Item Menu

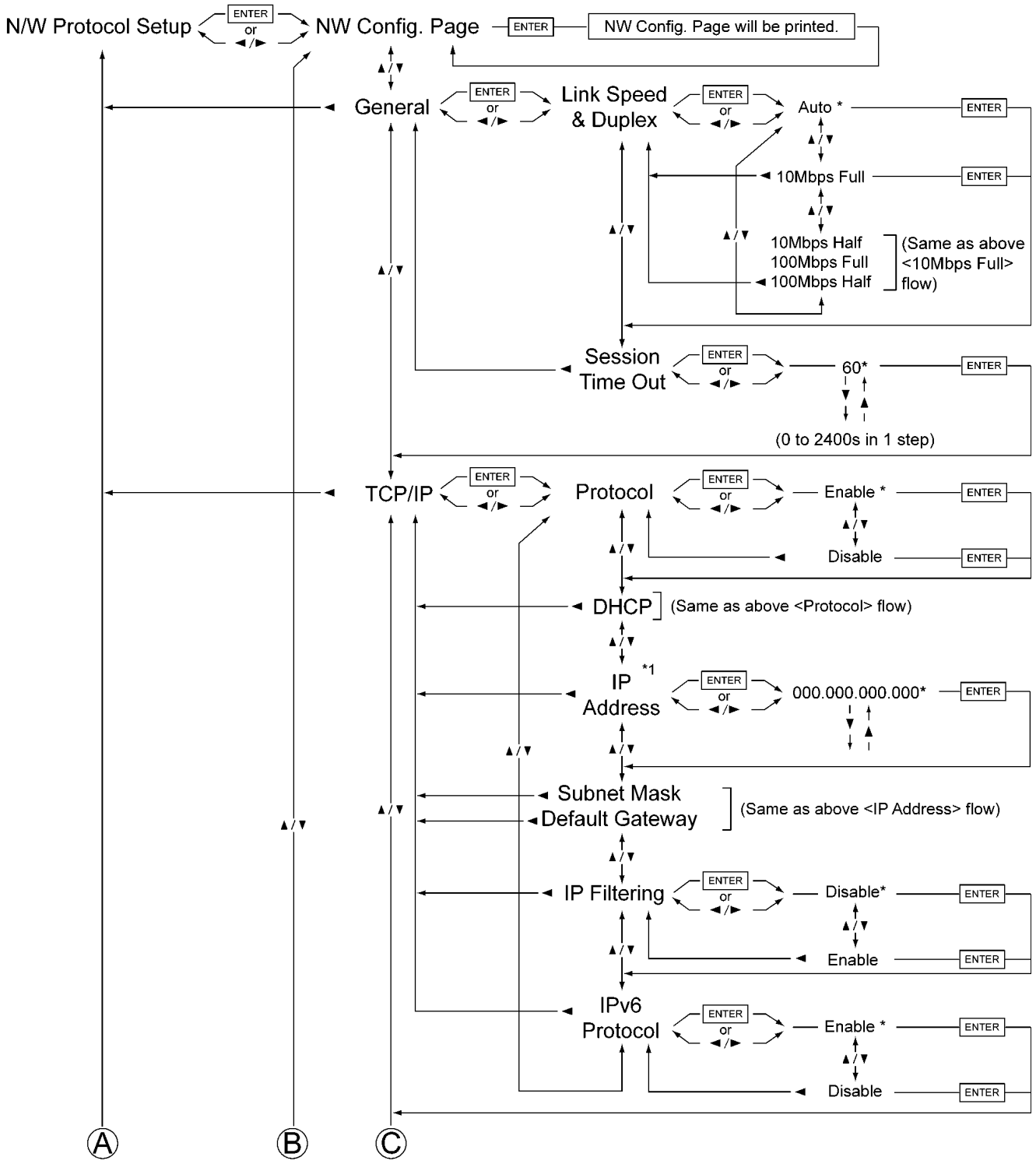
⑩ PostScript Item Menu

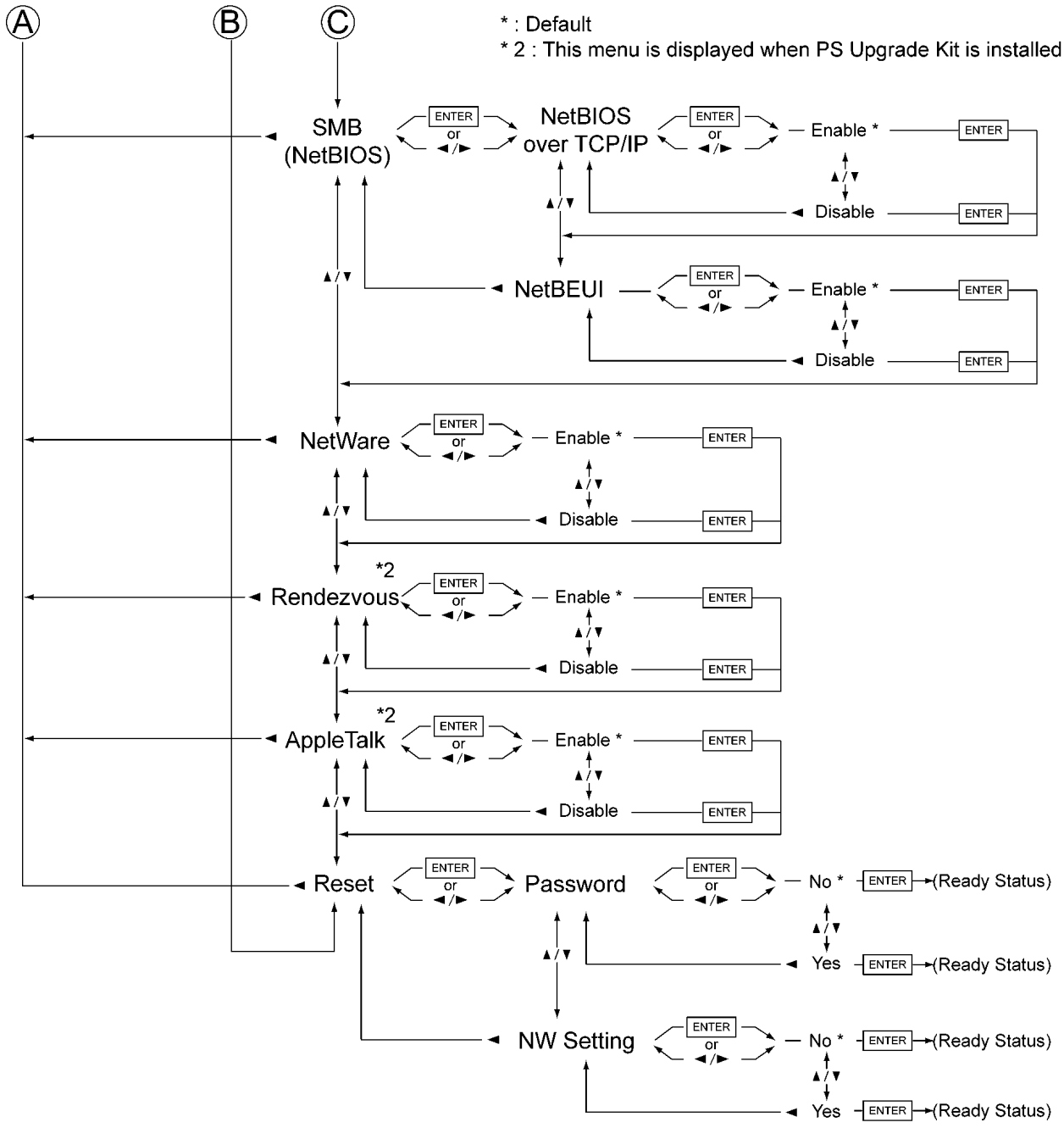
Note : This menu is displayed when the PS Upgrade Kit is installed.

4.13. N/W Protocol Setup Item Menu

⑪ N/W Protocol Setup Item Menu

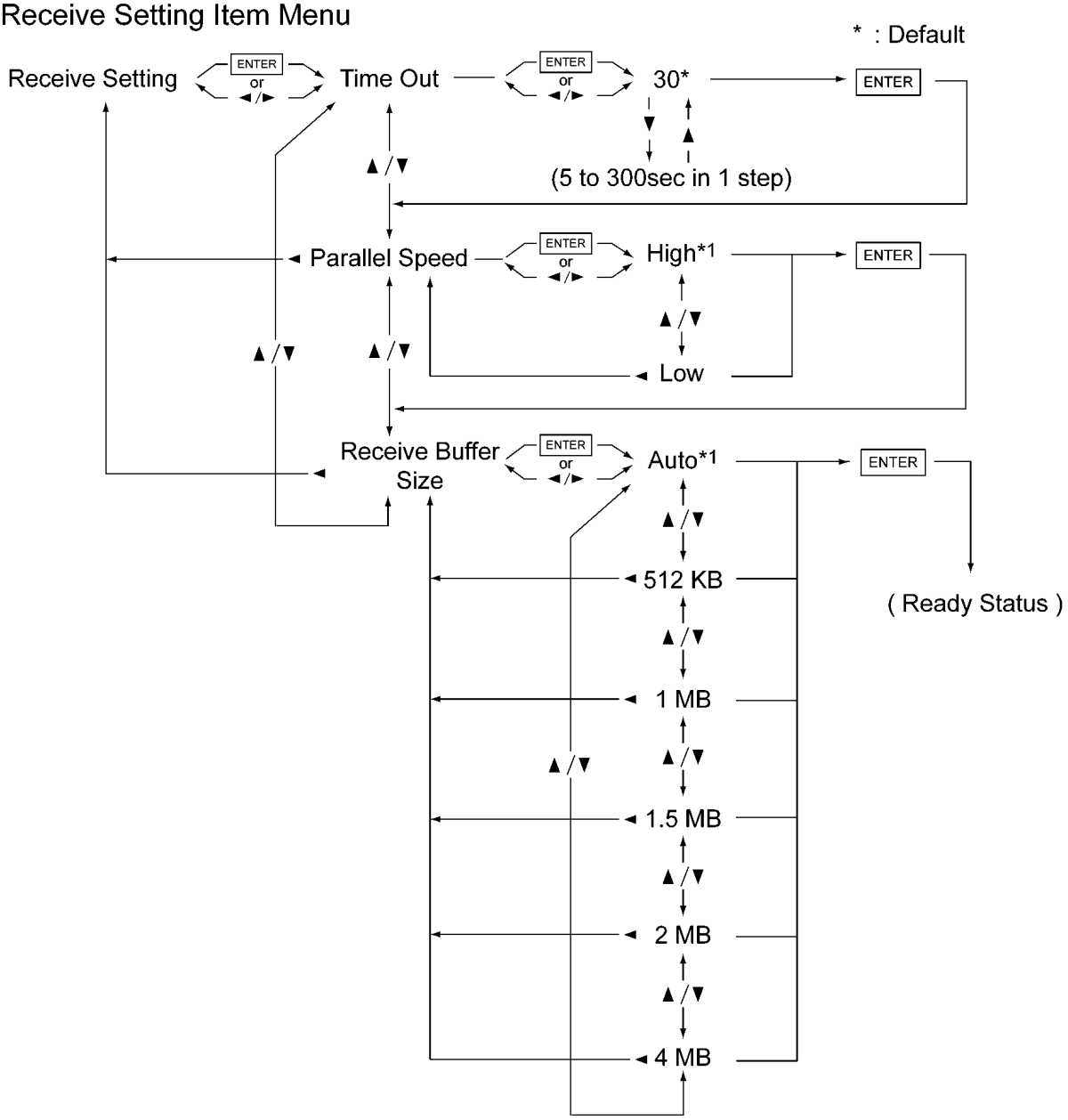
* : Default
* 1 : When the DHCP is disabled, this menu is displayed.




A
B
C
* : Default
* 2 : This menu is displayed when PS Upgrade Kit is installed.
SMB (NetBIOS)
NetBIOS over TCP/IP
Enable *
Disable
NetBEUI
Enable *
Disable
NetWare
Enable *
Disable
*2
Rendezvous
Enable *
Disable
*2
AppleTalk
Enable *
Disable
Reset
Password
No *
Yes
(Ready Status)
NW Setting
No *
Yes
(Ready Status)
ENTER
or

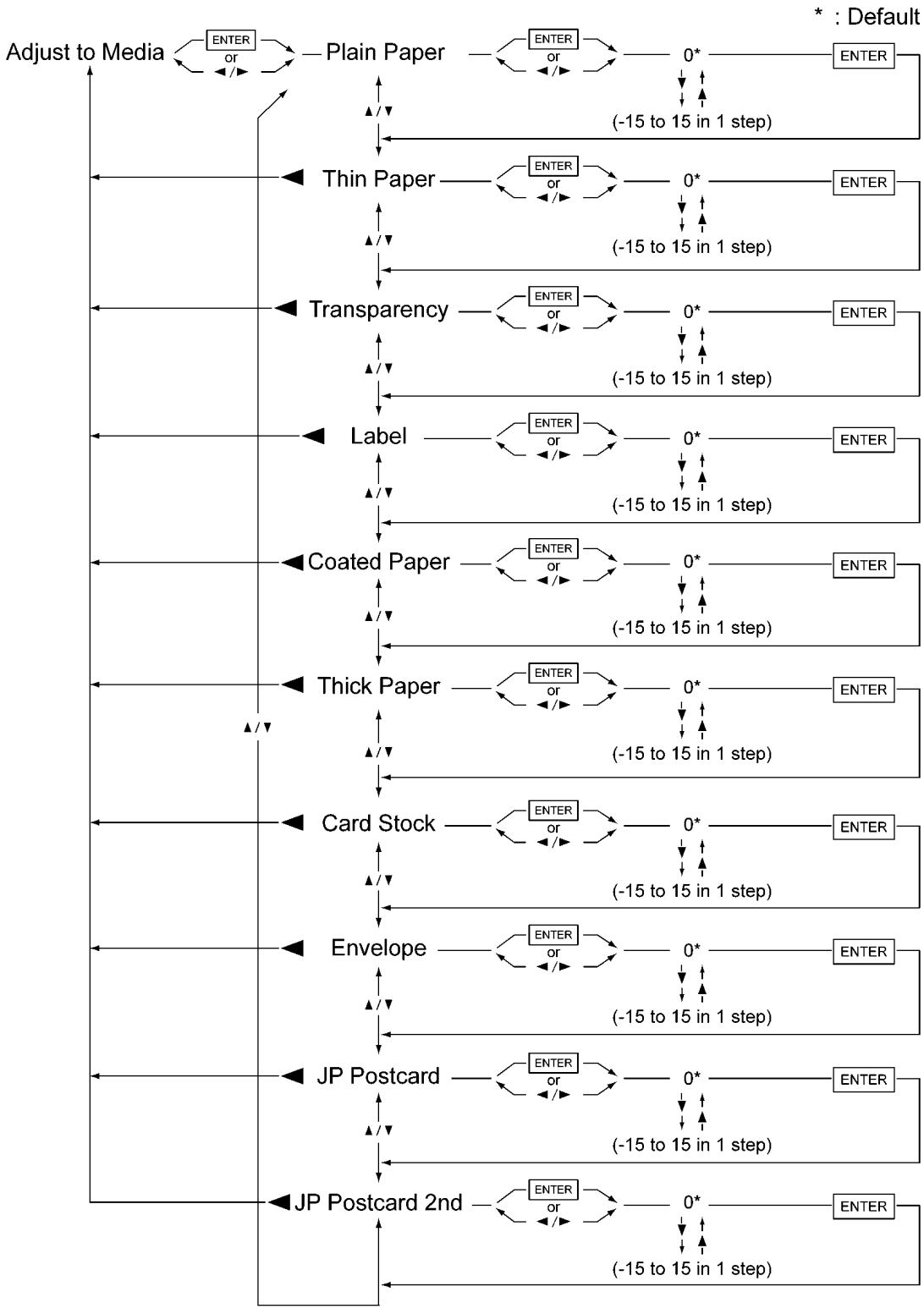
4.14. Receive Setting Item Menu

⑫ Receive Setting Item Menu



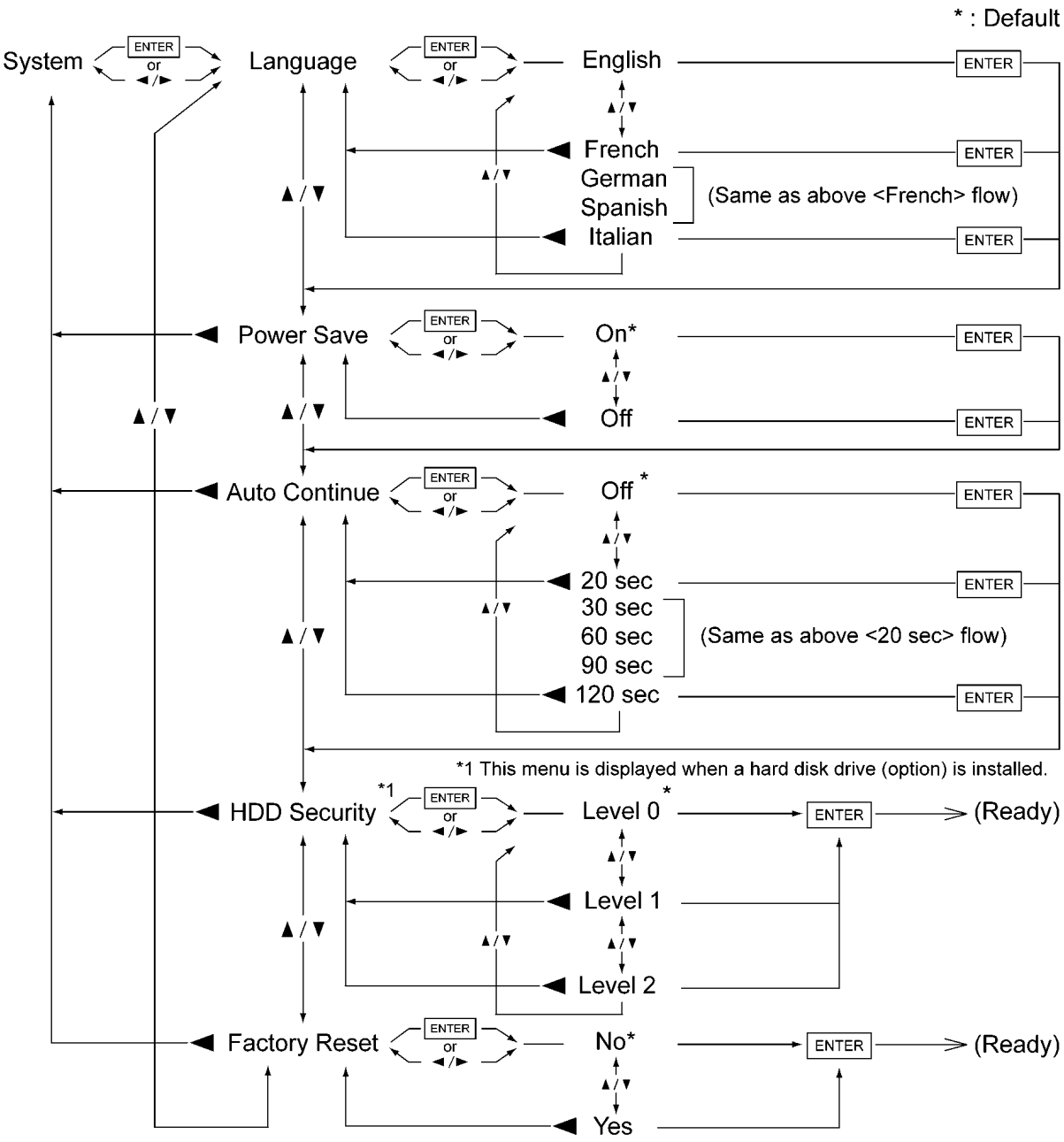
4.15. Adjust to Media Item Menu

⑬ Adjust to Media Item Menu



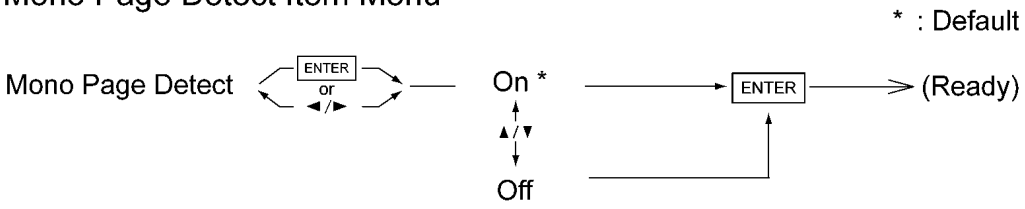
4.16. System Item Menu

⑭ System Item Menu



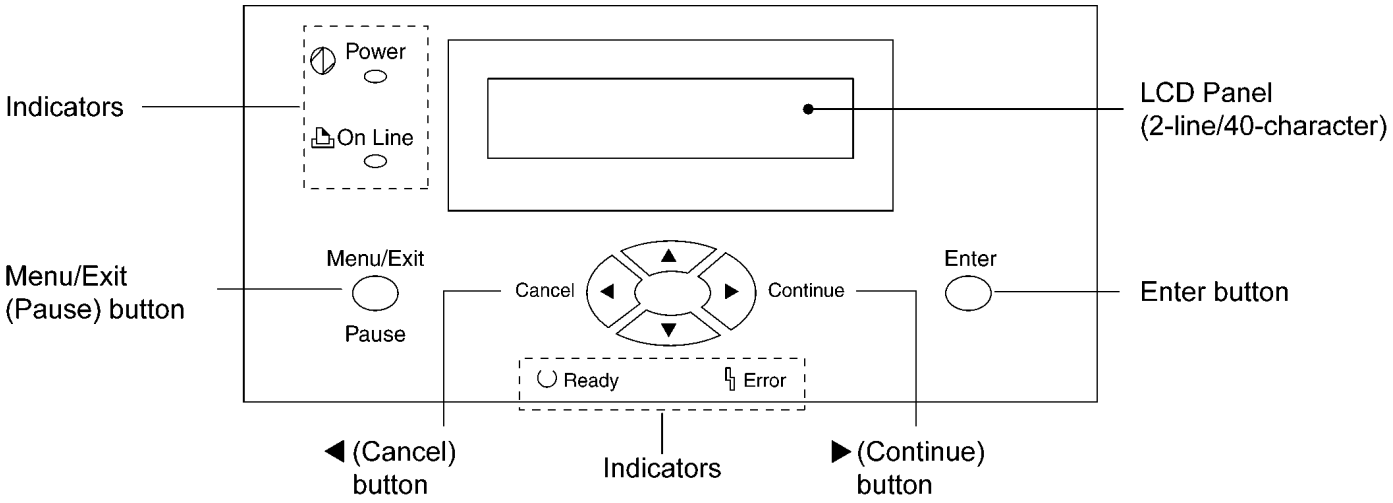
4.17. Mono Page Detect Item Menu

⑮ Mono Page Detect Item Menu



5 HDD Maintenance Mode Operation

5.1. HDD Maintenance Mode Operation



The HDD Maintenance mode has the following functions:

1. Displaying information of printer's hard disk drive
   - Volume Label
   - Total Size
   - Free Size
2. Checking the printer's hard disk drive
3. Formatting the printer's hard disk drive
   - Quick Format: Bad sectors are not checked.
   - HDD Format (Physical Format): It will take more time than the Quick Format because bad sectors are checked.
   - HDD Deletion:

   This feature is used for disposing of a printer's hard disk drive for security purposes. All sectors of the hard disk drive will be initialized. (It will take about 2 hours for 40 GB HDD.)

The HDD Maintenance Mode is entered by turning on the power while pressing the **Continue** button until "Initializing..." is displayed.

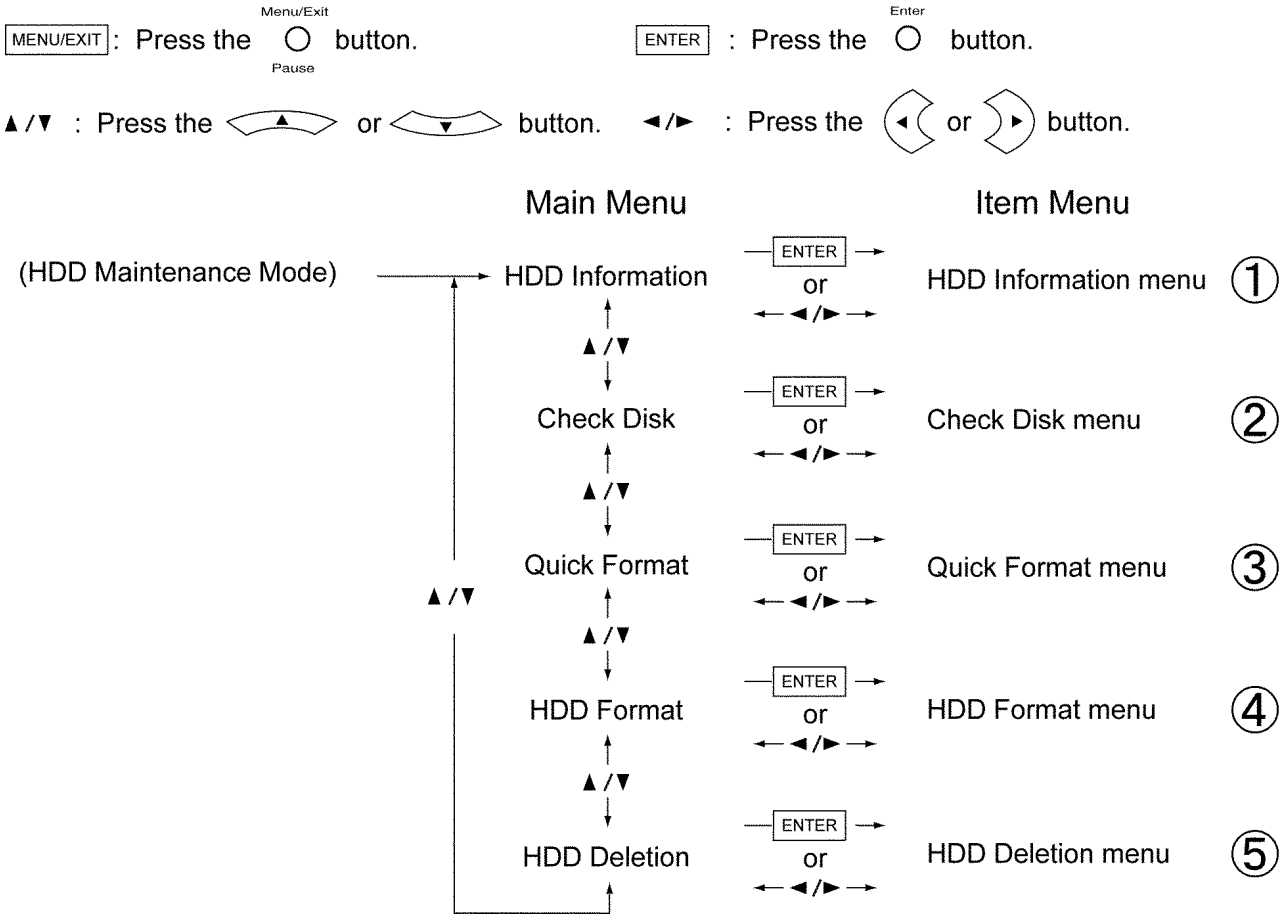
5.2. HDD Maintenance Mode Menu Table

The following table is shown when a hard disk drive is installed. If it is not installed, “HDD is not Installed” is displayed on the LCD Panel.

Main Menu	Item Menu	Selection 1 Menu	Selection 2 Menu	Description
HDD Information	Volume Label	C:	Reserved Area PostScript Area *1	Display each volume label.
		D:	Job Spool Area	
		E:	Temp Area	
	Total Size	C:	XXXX MB	Display Total Size of each specified area.
		D:	XXXX MB	
		E:	XXXX MB	
		ALL	XXXX MB	
	Free Size	C:	XXXX MB	Display Free Size of each specified area.
		D:	XXXX MB	
		E:	XXXX MB	
Check Disk	C:	No *		Perform Check Disk operation for specified area.
		Yes		
	D:	No *		
		Yes		
	E:	No *		
		Yes		
	ALL	No *		
		Yes		
Quick Format	C:	All data erase OK?	No*	Performs Quick Format operation for specified area.
			Yes	
	D:	All data erase OK?	No*	
			Yes	
	E:	All data erase OK?	No*	
			Yes	
	ALL	All data erase OK?	No*	
			Yes	
HDD Format	C:	All data erase OK?	No*	Performs HDD Format operation for specified area.
			Yes	
	D:	All data erase OK?	No*	
			Yes	
	E:	All data erase OK?	No*	
			Yes	
	ALL	All data erase OK?	No*	
			Yes	
HDD Deletion	All data erase OK?	No *		Performs erasing all data in the hard disk drive.
		Yes		

*: Default
*1: This area is used when the PS Upgrade Kit is installed.

5.3. HDD Maintenance Mode Main Menu



5.4. HDD Information Item Menu

① HDD Information Item Menu

* : This area is used when the PS Upgrade Kit is installed.

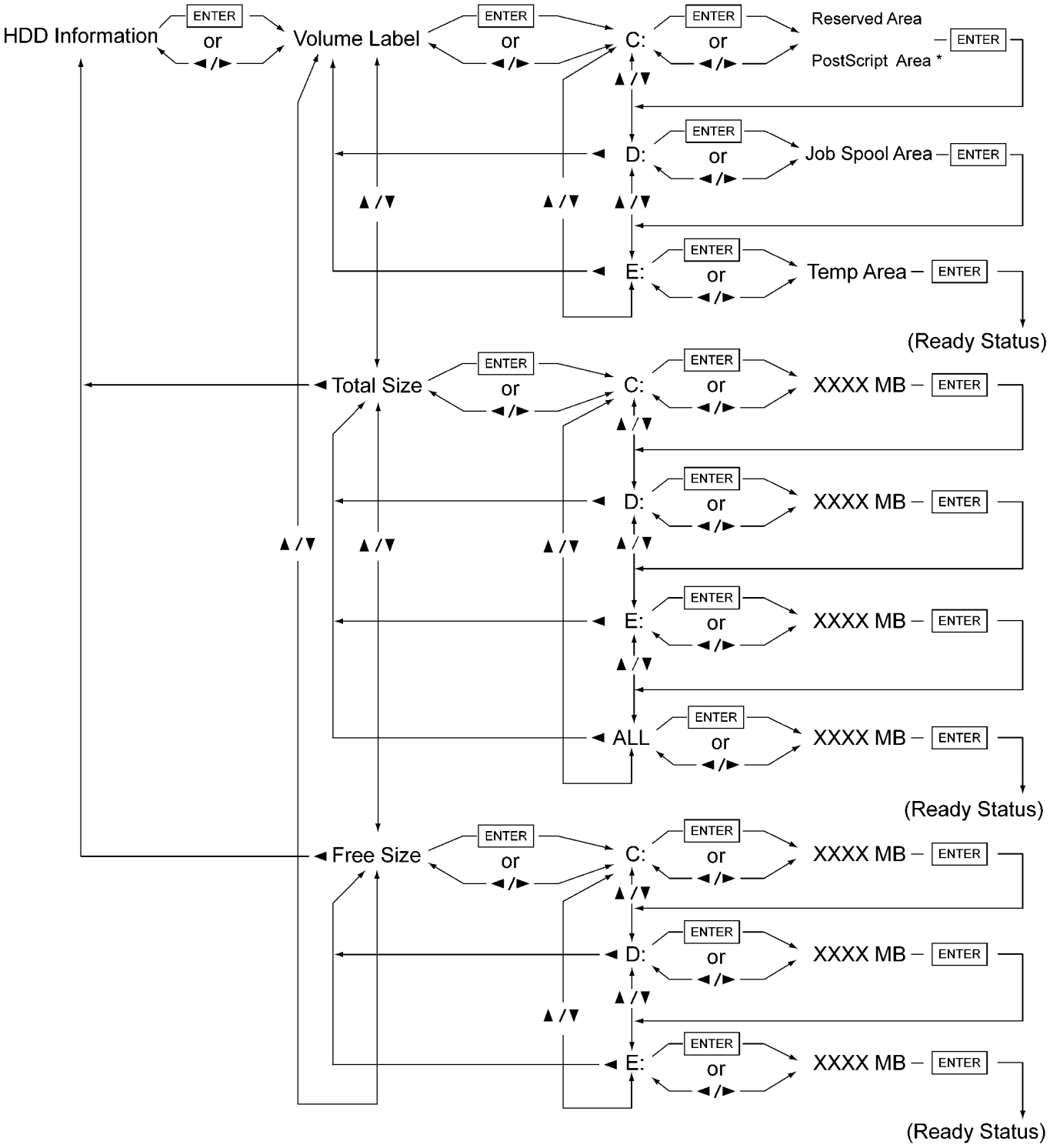
MENU/EXIT : Press the Menu/Exit / Pause button.

ENTER : Press the Enter button.

▲/▼ : Press the ▲ or ▼ button.

◄/► : Press the ◄ or ► button.

◄ : Press the ◄ button.



5.5. Check Disk Item Menu

② Check Disk Item Menu

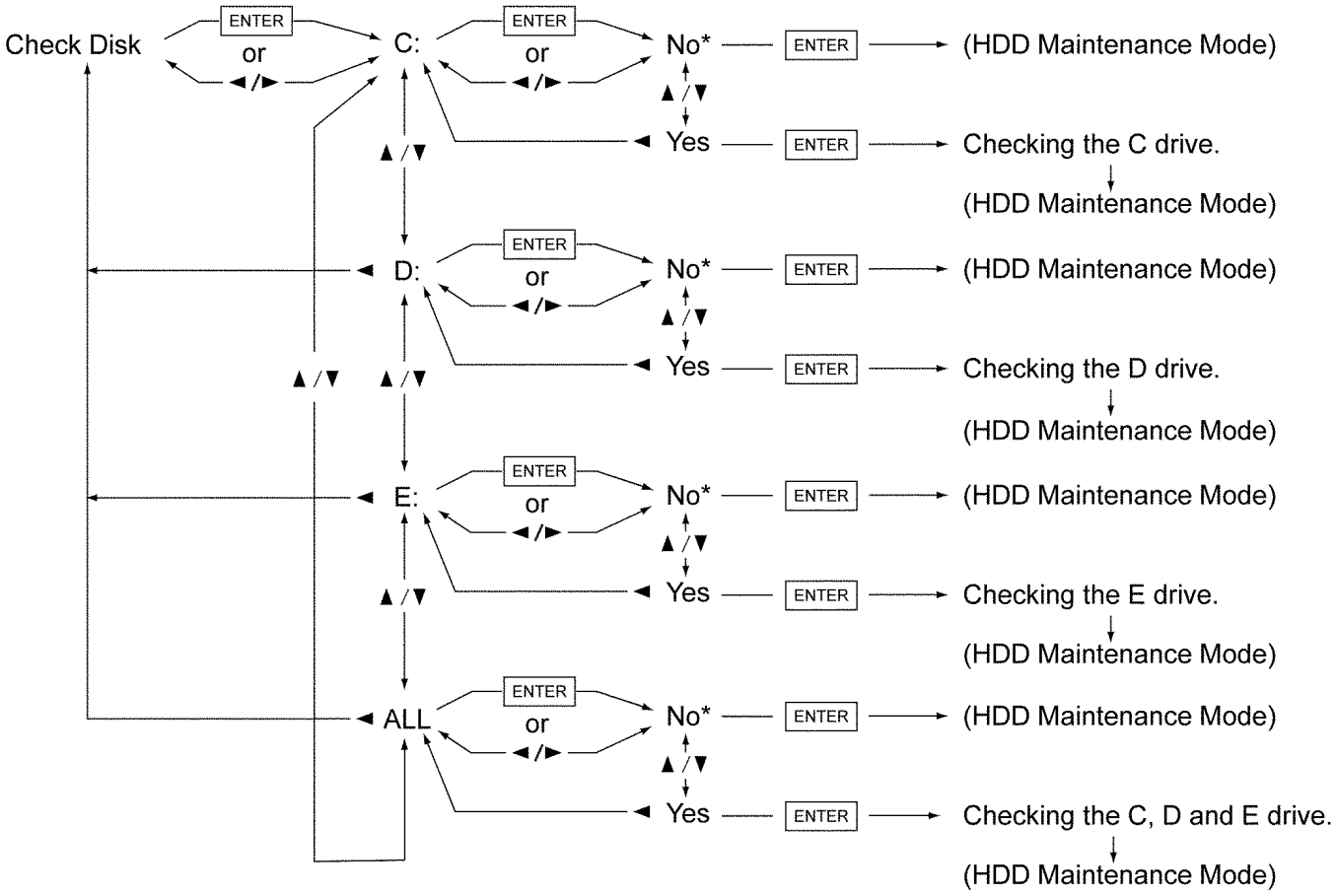
MENU/EXIT : Press the ○ (Menu/Exit / Pause) button.

▲/▼ : Press the ▲ or ▼ button.

ENTER : Press the ○ (Enter) button.

◄/► : Press the ◄ or ► button.

◄ : Press the ◄ button.



5.6. Quick Format Item Menu

③ Quick Format Item Menu

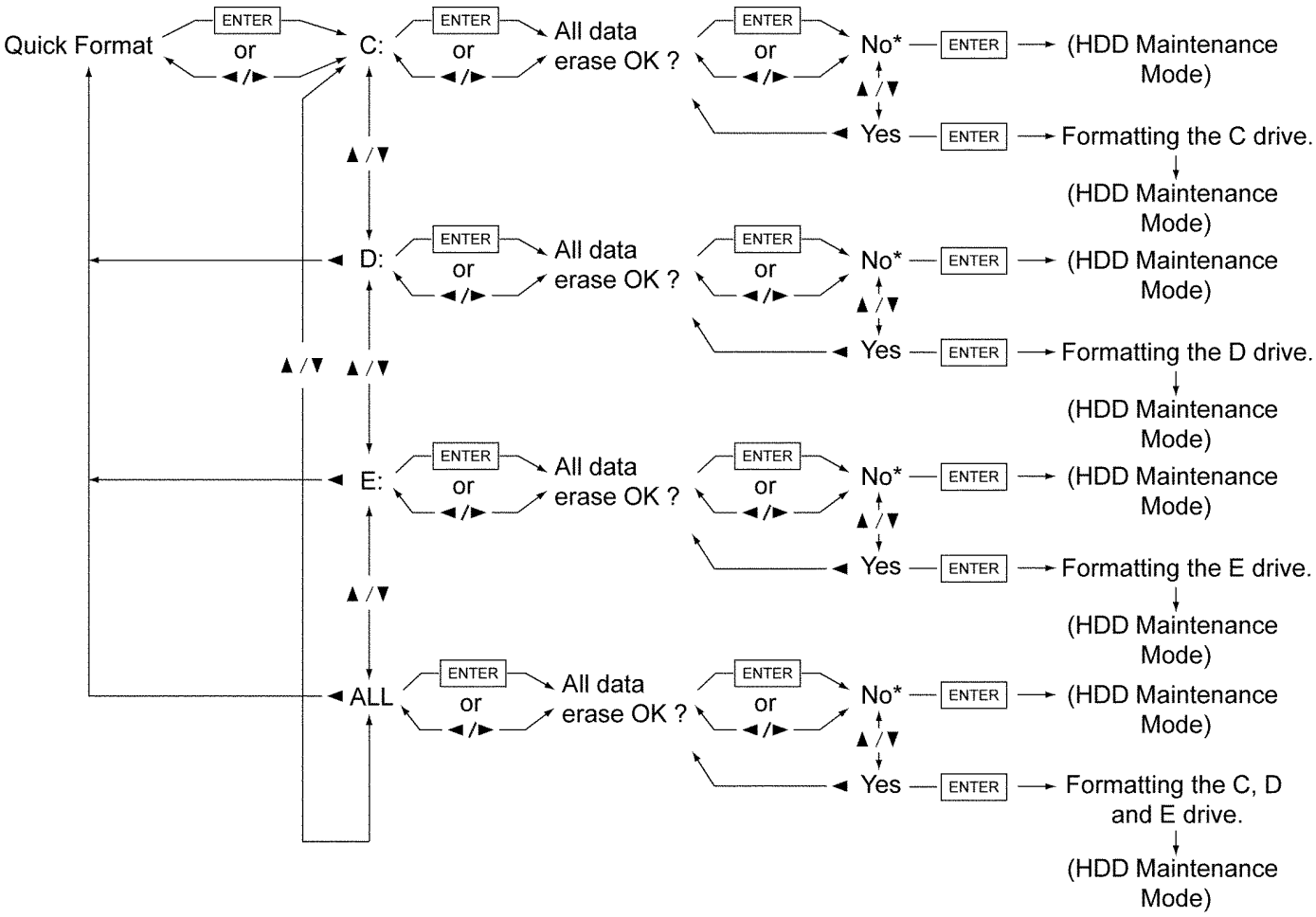
MENU/EXIT : Press the Menu/Exit / Pause button.

▲/▼ : Press the ▲ or ▼ button.

ENTER : Press the Enter button.

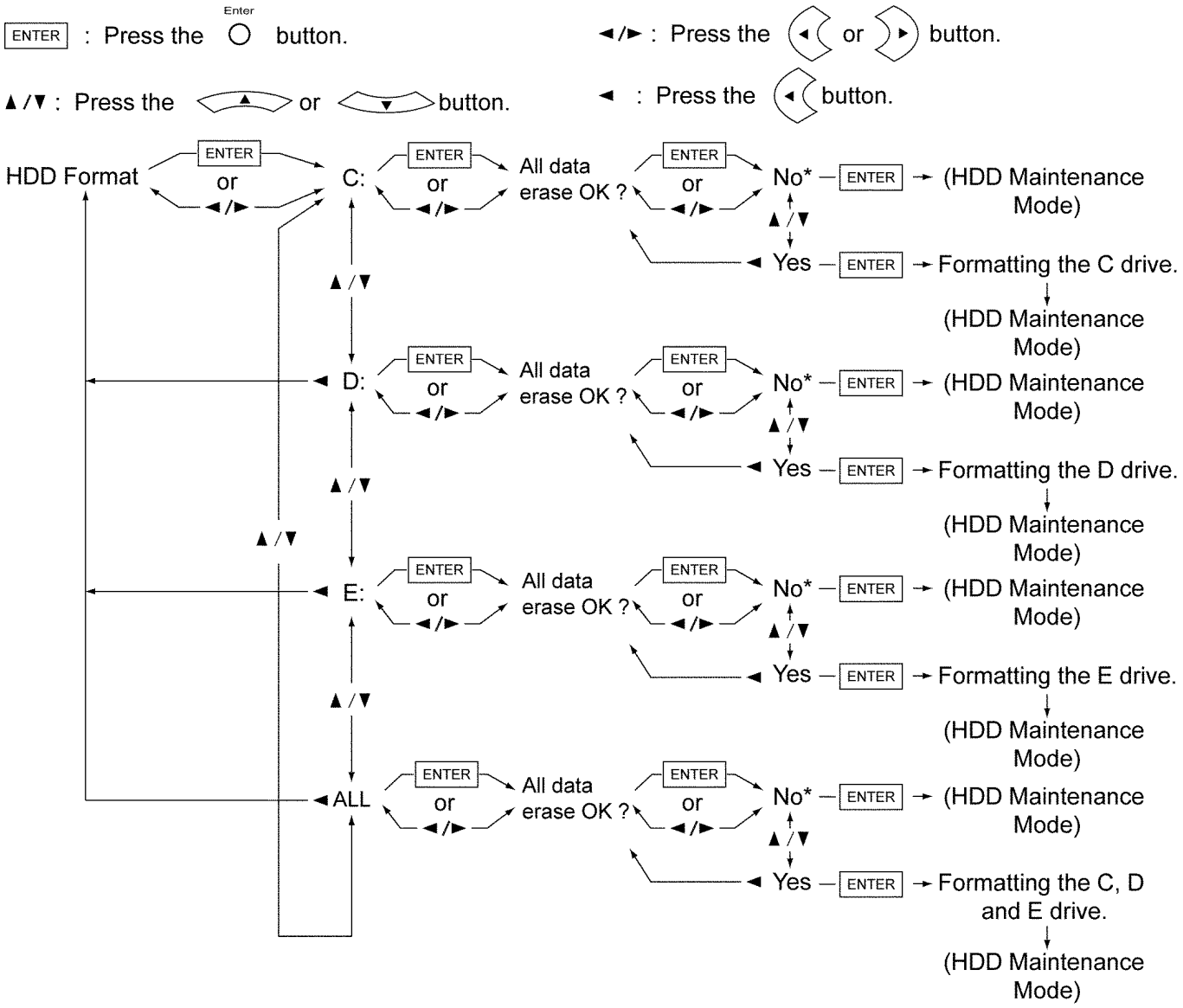
◄/► : Press the ◄ or ► button.

◄ : Press the ◄ button.



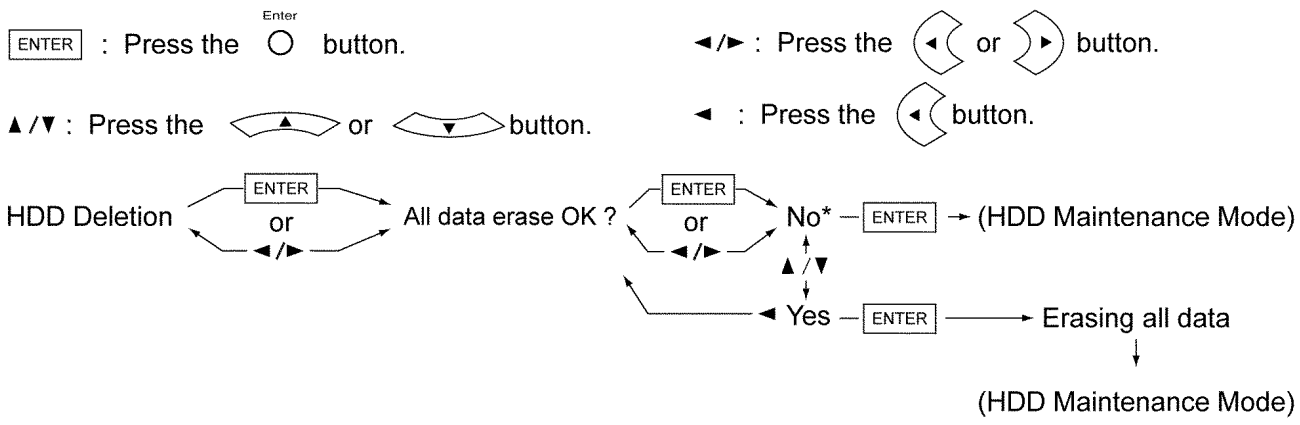
5.7. HDD Format Item Menu

④ HDD Format Item Menu



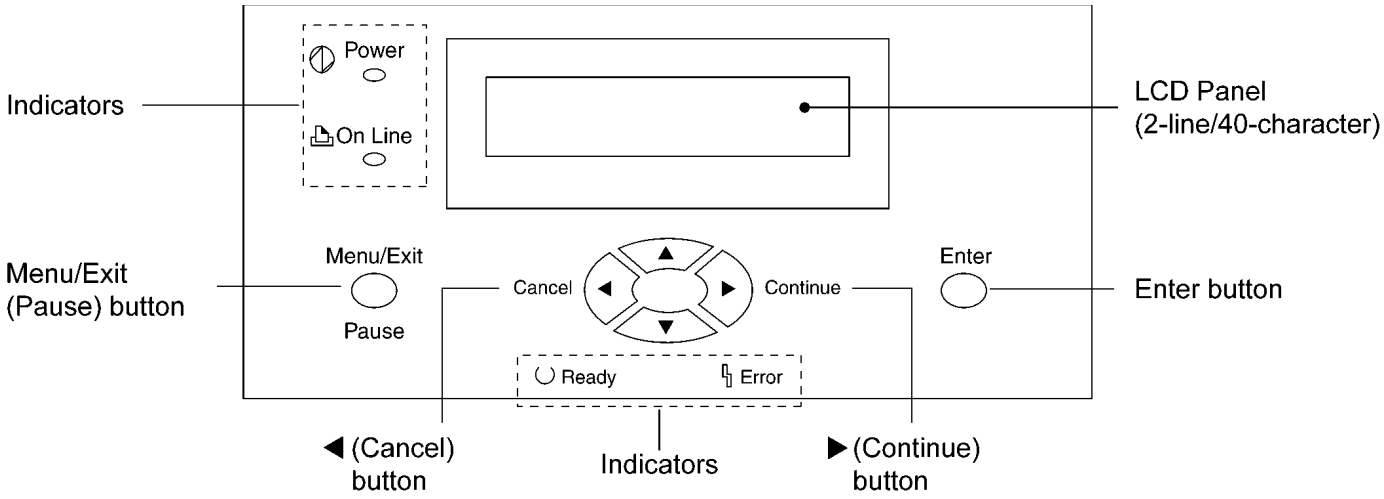
5.8. HDD Deletion Item Menu

⑤ HDD Deletion Item Menu



6 Service Mode Operation

6.1. Service Mode Control Panel Operation



6.1.1. How to enter the Service Mode

To enter the “Service Mode”, turn on the power while pressing the ▽ and △ buttons at the same time, and keep the pressing the ▽ and △ buttons until “**Initializing**” is displayed. The Service Mode will be activated. The Service Mode is accessible when the Power Save is off. After warming up, “Service Mode” is displayed in the LCD. This service mode is canceled by turning off the printer. The printer has a two-line, 40 character LCD (2 x 20 characters). The menus in the following Service Mode flowchart (sections 6.3 ~ 6.15) are displayed in the lower line.

6.1.2. How to print the Network Configuration Report

Turn on the power while pressing the Enter button and keep the pressing the Enter button until “Initializing...” is displayed. The Network Configuration Report will be printed. When completing the printing the Network Configuration Report, the printer’s LCD will display “Ready”. The printing examples are indicated in the section 6.16 “Printing Network Configuration Report”.

6.2. Service Mode Menu Table

* : Default
*1 This menu is displayed when an optional paper feeder is installed.
*2 This menu is displayed when two optional paper feeder are installed.

Main Menu	Item Menu	Selection 1 Menu	Selection 2 Menu	Description
Print Report	Service Report 1	---	---	Print "Service Report" which includes the Error Log.
	Service Report 2	---	---	Print "information" which includes the life count values of consumables and basic settings of the printer.
	Configuration Page	---	---	Print "Configuration Page" which mainly includes basic settings or configuration.
	NW Config. Page	---	---	Print "Configuration Page" which mainly includes basic settings including network configuration.
	ENG eeprom Dump	---	---	Print Engine eeprom Hex Dump list.
	CONT eeprom Dump	---	---	Print controller eeprom Dump list.
Position Setting	Top	0* (-30 to 30)	---	Adjust the Top margin.
	Tray1 Left	0* (-15 to 15)	---	Adjust the Tray1 Left margin on the front.
	Tray2 Left *1	0* (-15 to 15)	---	Adjust the Tray2 Left margin on the front.
	Tray3 Left *2	0* (-15 to 15)	---	Adjust the Tray3 Left margin on the front.
	MPT Left	0* (-15 to 15)	---	Adjust the MPT Left margin on the front.
	Duplex Left	0* (-15 to 15)	---	Adjust the Left Margin on the back when duplex printing.
	Test Print	Tray1/Top	---	Perform the test printing to adjust the Tray1 Left margin and Top margin on the front.
		Tray2 *1	---	Perform the test printing to adjust the Tray2 Left margin on the front.
		Tray3 *2	---	Perform the test printing to adjust the Tray3 Left margin on the front.
		MPT	---	Perform the test printing to adjust the MPT Left margin on the front.
		Duplex	---	Perform the test printing to adjust the Duplex Left margin on the back when duplex printing.
STR Setting	STR Bias Select	Center		Select STR bias level.
		High		
		Low		
	Plain STR	0* (-15 to 15)	---	Adjust the transfer bias for plain paper.
	Thin Paper STR	0* (-15 to 15)	---	Adjust the transfer bias for thin paper.
	Transparency STR	0* (-15 to 15)	---	Adjust the transfer bias for transparency paper.
	Label STR	0* (-15 to 15)	---	Adjust the transfer bias for label paper.
	Coated Paper STR	0* (-15 to 15)	---	Adjust the transfer bias for coated paper.
	Thick Paper STR	0* (-15 to 15)	---	Adjust the transfer bias for thick/card paper.

* : Default

Main Menu	Item Menu	Selection 1 Menu	Selection 2 Menu	Description
STR Setting	Card Stock STR	0* (-15 to 15)	---	Adjust the transfer bias for Card Stock.
	Envelope STR	0* (-15 to 15)	---	Adjust the transfer bias for envelope paper.
	JP Postcard STR	0* (-15 to 15)	---	Adjust the transfer bias for JP PostCard.
	JP Postcard 2nd STR	0* (-15 to 15)	---	Adjust the transfer bias for JP PostCard (2nd).
	STR Test Print	Plain Paper	---	Print the pattern for the adjustment of plain paper transfer bias.
		Thin Paper	---	Print the pattern for the adjustment of thin paper transfer bias.
		Transparency	---	Print the pattern for the adjustment of transparency transfer bias.
		Label	---	Print the pattern for the adjustment of label transfer bias.
		Coated Paper	---	Print the pattern for the adjustment of coated paper transfer bias.
		Thick Paper	---	Print the pattern for the adjustment of thick paper transfer bias.
		Card Stock	---	Print the pattern for the adjustment of card stock transfer bias.
		Envelope (US#9)	---	Print the pattern for the adjustment of envelope (US#9) transfer bias.
		Envelope (US#10)	---	Print the pattern for the adjustment of envelope (US#10) transfer bias.
		Envelope (Monarch)	---	Print the pattern for the adjustment of envelope (monarch) transfer bias.
		Envelope (C5)	---	Print the pattern for the adjustment of envelope (C5) transfer bias.
		Envelope (C6)	---	Print the pattern for the adjustment of envelope (C6) transfer bias.
		Envelope (DL)	---	Print the pattern for the adjustment of envelope (DL) transfer bias.
		Envelope (You#4)	---	Print the pattern for the adjustment of Envelope (You#4) transfer bias.
		JP PostCard	---	Print the pattern for the adjustment of JP PostCard transfer bias.
		JP PostCard 2nd	---	Print the pattern for the adjustment of JP PostCard 2nd transferal bias.
DEV. Bias Setting	Paper/Other	Cyan	0* (-10 to 10)	Adjust the cyan developer bias except transparency.
		Magenta	0* (-10 to 10)	Adjust the magenta developer bias except transparency.
		Yellow	0* (-10 to 10)	Adjust the yellow developer bias except transparency.
		Black	0* (-10 to 10)	Adjust the black developer bias except transparency.
		Dev. Test Print	---	Print the pattern for the developer bias adjustment of cyan, magenta, yellow and black except transparency.
	Transparency	Cyan	0* (-10 to 10)	Adjust the cyan developer bias for transparency.
		Magenta	0* (-10 to 10)	Adjust the magenta developer bias for transparency.
		Yellow	0* (-10 to 10)	Adjust the yellow developer bias for transparency.
		Black	0* (-10 to 10)	Adjust the black developer bias for transparency.
		Dev. Test Print	---	Print the pattern for the transparency developer bias adjustment of cyan, magenta, yellow and black.

* : Default

Main Menu	Item Menu	Selection 1 Menu	Selection 2 Menu	Description
FSR Temp. Setting	Plain	0* (-10 to 10)	---	Adjust plain paper fusing temperature.
	Thin Paper	0* (-10 to 10)	---	Adjust thin paper fusing temperature.
	Transparency	0* (-10 to 10)	---	Adjust transparency fusing temperature.
	Label	0* (-10 to 10)	---	Adjust label paper fusing temperature.
	Coated Paper	0* (-10 to 10)	---	Adjust coated paper fusing temperature.
	Thick Paper	0* (-10 to 10)	---	Adjust thick paper fusing temperature.
	Card Stock	0* (-10 to 10)	---	Adjust card stock fusing temperature.
	Envelope	0* (-10 to 10)	---	Adjust envelope fusing temperature.
	JP Postcard	0* (-10 to 10)	---	Adjust JP postcard fusing temperature.
	JP Postcard 2nd	0* (-10 to 10)	---	Adjust JP postcard (2nd) fusing temperature.
	Temp. Test Prn.	Plain Paper	---	Print the fusing temperature adjustment pattern for plain paper.
		Thin Paper	---	Print the fusing temperature adjustment pattern for thin paper.
		Transparency	---	Print the fusing temperature adjustment pattern for transparency.
		Label	---	Print the fusing temperature adjustment pattern for label.
		Coated Paper	---	Print the fusing temperature adjustment pattern for coated paper.
		Thick Paper	---	Print the fusing temperature adjustment pattern for thick paper/card.
		Card Stock	---	Print the fusing temperature adjustment pattern for card stock.
		Envelope (US#9)	---	Print the fusing temperature adjustment pattern for envelope (US#9).
		Envelope (US#10)	---	Print the fusing temperature adjustment pattern for envelope (US#10).
		Envelope (Monarch)	---	Print the fusing temperature adjustment pattern for envelope (Monarch).
		Envelope (C5)	---	Print the fusing temperature adjustment pattern for envelope (C5).
		Envelope (C6)	---	Print the fusing temperature adjustment pattern for envelope (C6).
		Envelope (DL)	---	Print the fusing temperature adjustment pattern for envelope (DL).
		Envelope (You#4)	---	Print the fusing temperature adjustment pattern for envelope (You#4).
		JP Postcard	---	Print the fusing temperature adjustment pattern for JP Postcard.
		JP Postcard 2nd	---	Print the fusing temperature adjustment pattern for JP Postcard 2nd.

* : Default

Main Menu	Item Menu	Selection 1 Menu	Selection 2 Menu	Selection 3 Menu	Description
Maintenance	Reset Counter	New TC-C ?	No *	---	No counter reset of cyan toner cartridge.
			Yes (6K)	---	Reset counter of cyan toner cartridge.
			Yes (3K)	---	Reset counter of cyan toner cartridge.
		New TC-M ?	No *	---	No counter reset of magenta toner cartridge.
			Yes (6K)	---	Reset counter of magenta toner cartridge.
			Yes (3K)	---	Reset counter of magenta toner cartridge.
		New TC-Y ?	No *	---	No counter reset of yellow toner cartridge.
			Yes (6K)	---	Reset counter of yellow toner cartridge.
			Yes (3K)	---	Reset counter of yellow toner cartridge.
		New TC-K ?	No *	---	No counter reset of black toner cartridge.
			Yes	---	Reset counter of black toner cartridge.
		New AU ?	No *	---	No counter reset of accumulator unit.
			Yes	---	Reset counter of accumulator unit.
		New TR ?	No *	---	No counter reset of transfer roller.
			Yes	---	Reset counter of transfer roller.
		New FSR ?	No *	---	No counter reset of fuser unit
			Yes	---	Reset counter of fuser unit.
		Log Data Clear	Error Counter Clr	No *	No counter reset in the service report.
				Yes	Reset counter in the service report.
			JAM Error Log Clr	No *	No reset jam log in the service report.
				Yes	Reset jam log in the service report.
			Service Err Log Clr	No *	No reset service log in the service report.
				Yes	Reset service log in the service report.
	Toner Capacity	TC-C	6K *	---	Cyan Toner Cartridge capacity is set to 6K.
			3K	---	Cyan Toner Cartridge capacity is set to 3K.
		TC-M	6K *	---	Magenta Toner Cartridge capacity is set to 6K.
			3K	---	Magenta Toner Cartridge capacity is set to 3K.
		TC-Y	6K*	---	Yellow Toner Cartridge capacity is set to 6K.
			3K	---	Yellow Toner Cartridge capacity is set to 3K.
ENG Serial Number	**********	---	---	---	Input the engine serial number.
Controller Setting	Country	(-M) USA · (-U) UK		---	The application area/country is set.
	Print Format	Letter	---	---	The paper size is set when the factory reset in user mode.
		A4	---		
	Language	English *	---	---	The language can be selected that is set when factory reset in user mode.
		French	---		
		German	---		
		Spanish	---		
		Italian	---		
	PCL Symbol Set	PC-8 · PC-775		---	The symbol set can be selected that is set when factory reset in user mode.
	Power Save Level	Level I (Doze)	---	---	Power Save Mode is changed into Doze Mode.
		Level II (Nap) *	---	---	Power Save Mode is changed into Nap Mode.
	Device ID Code	ASCII *	---	---	The value of VSTATUS is converted from Binary to ASCII on the printer.
		Binary	---	---	The value of VSTATUS is not converted on the printer. It is handled as Binary.
Panel Test	---	---	---	---	The panel test is done.

* : Default *1: Before performing this test, remove the paper supply tray.

Main Menu	Item Menu	Selection 1 Menu	Selection 2 Menu	Description
Engine Test	Solenoid Test	Tray1 Pick Solenoid *1	---	The pickup solenoid in the paper feed unit is turned on for approx. 1 sec.
		Tray2 Pick Solenoid *1	---	The pickup solenoid in the 2nd paper feeder is turned on for approx. 1 sec.
		Tray3 Pick Solenoid *1	---	The pickup solenoid in the 3rd paper feeder is turned on for approx. 1 sec.
		AU Cam Solenoid	---	The cam ratchet solenoid in the accumulator tension unit is turned on for approx. 1 sec.
		AU Changer Solenoid	---	The changer solenoid in the accumulator tension unit is turned on for approx. 1 sec.
		BK Solenoid	---	The BK solenoid in the main drive unit is turned on for approx. 1 sec.
		ADU Exit Solenoid	---	The switchback solenoid in the paper exit block is turned on for approx. 1 sec.
		Toner Sply Engage	---	The toner supply solenoid in the toner cartridge holder is turned on for approx. 1 sec.
	Regist Clutch Test	Regist Clutch	---	The registration clutch in the paper feed unit is turned on for approx. 2.5 sec.
	Motor Test	MPT Pick MTR (100)	---	The paper pickup motor is turned on for approx. 1.5 sec at the process speed 100 mm/s (printing speed is 18 pages/min. [Letter/Simplex]).
		MPT Pick MTR (124)	---	The paper pickup motor is turned on for approx. 1.5 sec at the process speed 124 mm/s (printing speed is 22 pages/min. [Letter/Simplex]).
		MPT Pick MTR (50)	---	The paper pickup motor is turned on for approx. 1.5 sec at the process speed 50 mm/s (printing speed is 9.5 pages/min. [Letter/Simplex]).
		PC(K)/AU MTR (100)	---	The BK drive motor is turned on for approx. 1.5 sec at the process speed 100 mm/s (printing speed is 18 pages/min. [Letter/Simplex]). See Cautions 1 and 2.
		PC(K)/AU MTR (124)	---	The BK drive motor is turned on for approx. 1.5 sec at the process speed 124 mm/s (printing speed is 22 pages/min. [Letter/Simplex]). See Cautions 1 and 2.
		PC(K)/AU MTR (50)	---	The BK drive motor is turned on for approx. 1.5 sec at the process speed 50 mm/s (printing speed is 9.5 pages/min. [Letter/Simplex]). See Cautions 1 and 2.
		PC(CLR) MTR (100)	---	The CMY drive motor is turned on for approx. 1.5 sec at the process speed 100 mm/s (printing speed is 18 pages/min. [Letter/Simplex]). See Cautions 1 and 2.
		PC(CLR) MTR (124)	---	The CMY drive motor is turned on for approx. 1.5 sec at the process speed 124 mm/s (printing speed is 22 pages/min. [Letter/Simplex]). See Cautions 1 and 2.
		PC(CLR) MTR (50)	---	The CMY drive motor is turned on for approx. 1.5 sec at the process speed 50 mm/s (printing speed is 9.5 pages/min. [Letter/Simplex]). See Cautions 1 and 2.

Caution 1 :
Before performing this test, install all following units or remove all following units to avoid the toner clogging in the accumulator unit and print cartridge units.
1. All print cartridges (Black and CMY)
2. Accumulator Unit
3. Waste Toner Cartridge

Caution 2 :
When performing this test while opening the right cover, lift up the waste toner cartridge to the upper position, or the waste toner will be dispersed.

* : Default

Main Menu	Item Menu	Selection 1 Menu	Selection 2 Menu	Description
Engine Test	Motor Test	Tray2 Feed MTR (100)	---	The paper feed motor in the 2nd feeder is turned on for approx. 1.5 sec at the process speed 100 mm/s (printing speed is 18 pages/min. [Letter/Simplex]).
		Tray2 Feed MTR (124)	---	The paper feed motor in the 2nd feeder is turned on for approx. 1.5 sec at the process speed 124 mm/s (printing speed is 22 pages/min. [Letter/Simplex]).
		Tray2 Feed MTR (50)	---	The paper feed motor in the 2nd feeder is turned on for approx. 1.5 sec at the process speed 50 mm/s (printing speed is 9.5 pages/min. [Letter/Simplex]).
		Tray3 Feed MTR (100)	---	The paper feed motor in the 3rd feeder is turned on for approx. 1.5 sec at the process speed 100 mm/s (printing speed is 18 pages/min. [Letter/Simplex]).
		Tray3 Feed MTR (124)	---	The paper feed motor in the 3rd feeder is turned on for approx. 1.5 sec at the process speed 124 mm/s (printing speed is 22 pages/min. [Letter/Simplex]).
		Tray3 Feed MTR (50)	---	The paper feed motor in the 3rd feeder is turned on for approx. 1.5 sec at the process speed 50 mm/s (printing speed is 9.5 pages/min. [Letter/Simplex]).
	Paper Detect Sensor	Tray1 Paper Sensor	---	The paper empty sensor in the paper feed unit is checked. When detecting the paper, "Sensor : Detected" is displayed. When detecting no paper, "Sensor : No Paper" is displayed.
		Registration Sensor	---	The registration sensor in the paper feed unit is checked. When detecting the paper, "Sensor : Detected" is displayed. When detecting no paper, "Sensor : No Paper" is displayed.
		MPT Paper Sensor	---	The MPT paper detection sensor in the paper feed unit is checked. When detecting the paper, "Sensor : Detected" is displayed. When detecting no paper, "Sensor : No Paper" is displayed.
		Tray2 Paper Sensor	---	The paper empty sensor in the 2nd feeder unit is checked. See Note.
		Tray2 Jam Sensor	---	The paper jam sensor in the 2nd feeder unit is checked. See Note.
		Tray3 Paper Sensor	---	The paper empty sensor in the 3rd feeder unit is checked. See Note.
		Tray3 Jam Sensor	---	The paper jam sensor in the 3rd feeder unit is checked. When detecting the paper, "Sensor : Detected" is displayed. When detecting no paper, "Sensor : No Paper" is displayed. When the 3rd Feeder is not installed, "No Paper" is displayed.

Note:
When detecting the paper, "Sensor : Detected" is displayed. When detecting no paper, "Sensor : No Paper" is displayed.
When the 2nd (3rd) Feeder is not installed, "No Paper" is displayed.

* : Default

Main Menu	Item Menu	Selection 1 Menu	Selection 2 Menu	Description
Engine Test	Paper Detect Sensor	Exit Full Sensor	---	The paper full sensor in the paper exit block is checked. When the paper tray is full, "Sensor : Full" is displayed. When the paper tray is not full, "Sensor : Not Full" is displayed.
		ADU Jam Sensor	---	The ADU jam detection sensor in the paper exit block is checked. When detecting the paper, "Sensor : Detected" is displayed. When detecting no paper, "Sensor : No Paper" is displayed.
		Fuser Exit Sensor	---	The paper ejection sensor in the fuser unit is checked. When detecting the paper, "Sensor : Detected" is displayed. When detecting no paper, "Sensor : No Paper" is displayed.
	Cassette Sensor	Tray1 Cassette	---	The paper size detection switches are checked. One of "Sensor : No Cassette", "Sensor : A4", "Sensor : Letter" , "Sensor : Legal" and "Sensor: B5 (JIS)" is displayed.
		Tray2 Cassette	---	The paper size detection switches in the 2nd feeder are checked. One of "Sensor : No Cassette", "Sensor : A4", "Sensor : Letter" , "Sensor : Legal" and "Sensor: B5 (JIS)" is displayed.
		Tray3 Cassette	---	The paper size detection switches in the 3rd feeder are checked. One of "Sensor : No Cassette", "Sensor : A4", "Sensor : Letter" , "Sensor : Legal and "Sensor: B5 (JIS)" is displayed.
	Temp&Humidity Sensor	Fusing Temp (1)	---	The temperature on the center surface of the fuser belt is displayed.
		Fusing Temp (2)	---	The temperature on the right side surface of the fuser belt is displayed.
		Fusing Temp (3)	---	The temperature of the pressure belt is displayed.
		Temperature Sensor	---	The internal temperature of the printer is displayed.
		Humidity Sensor	---	The internal humidity of the printer is displayed.
	WTC & Toner Sensor	WTC Full Sensor	---	The waste toner cartridge full sensor is checked. When the waste toner is full, "Sensor : Full" is displayed. When the waste toner is not full, "Sensor : Not Full" is displayed.
		Toner Emp. Sensor (C)	---	The toner empty sensor (C, M, Y, K) is checked. When detecting the toner, "Sensor : Detected" is displayed. When detecting no toner, "Sensor : Empty" is displayed.
		Toner Emp. Sensor (M)		
		Toner Emp. Sensor (Y)		
		Toner Emp. Sensor (K)		

* : Default

Main Menu	Item Menu	Sub Menu 1	Sub Menu 2	Description
Engine Test	WTC & Toner Sensor	AU/WTC Sensor	---	The WTC/AU sensor is checked. When detecting the accumulator unit and waste toner cartridge, "Sensor : Detected" is displayed. When detecting no accumulator unit and no waste toner cartridge, "Sensor : No AU and WTC" is displayed.
	Door Sensor	Font/Side Door	---	The front/right door open detection switch is checked. When the front door, right cover or both doors is/are opened, "Sensor : Door Open" is displayed. When the door(s) is/are closed , "Sensor : Door Close" is displayed.
		Toner Door	---	The toner cartridge access cover detection switch is checked. When the toner cartridge access cover is opened, "Sensor : Door Open" is displayed. When the toner cartridge access cover is closed , "Sensor : Door Close" is displayed.
	Other Sensor	MPT Home Position	---	The MPT home position sensor is checked. When the MPT pickup roller is at home position, "Sensor : Home" is displayed. When the MPT pickup roller is not at home position, "Sensor : Not Home" is displayed.
		Fuser Rotation	---	The fuser roller rotation sensor in the fuser unit is checked. When the fuser roller is rotating, "Sensor : Rotating" is displayed. When the fuser roller is not stopped, "Sensor : Not Rotating" is displayed.
		Color Missreg. (1)	---	The value of color registration sensor (1) is displayed.
		Color Missreg. (2)	---	The value of color registration sensor (2) is displayed.
		Duplex Unit Sensor	---	The ADU Detection Sensor Switch is checked. When the ADU (automatic duplex unit) is installed, "Sensor : Detected" is displayed. When the ADU is not installed, "Sensor : No Unit" is displayed.
		PC(K) Sens.Output	---	The output voltage of black print cartridge virgin sensor is displayed.
		PC(CLR) Sens.Output	---	The output voltage of color print cartridge virgin sensor is displayed.
Color Correction	Mis-Reg.Tbl Reset	No *	---	No reset the color compensation table.
		Yes	---	Reset the color compensation table.
	Skew Correction Set	On *	---	The skew correction mode is active.
		Off	---	The skew correction mode is inactive.
Flag Setting	Set Toner Supply	No *	---	The printer are not replenished with toner even if you turn it on.
		Yes	---	When turning on the printer, it will take up to 5 minutes to fill the printer with toner

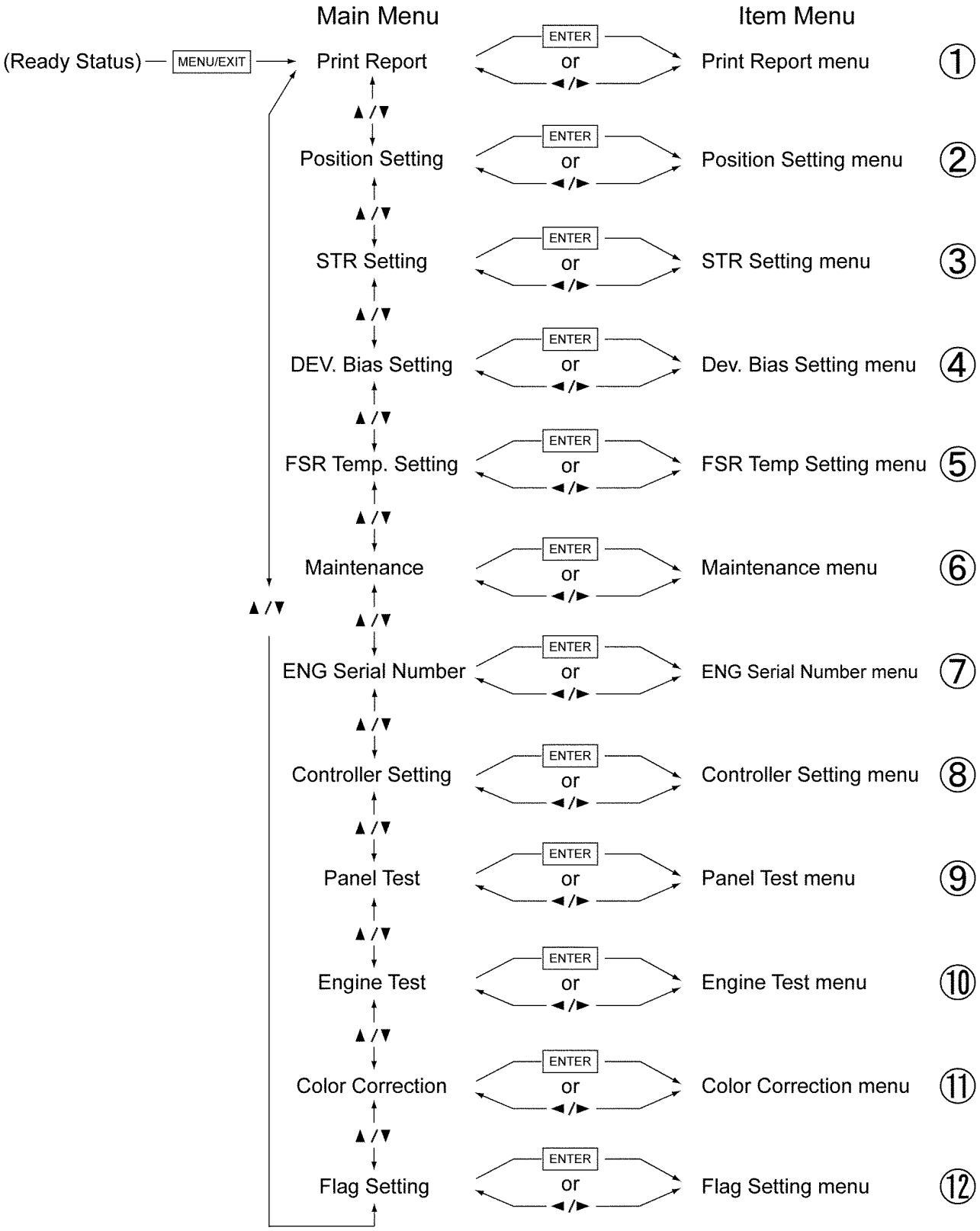
6.3. Service Main Menu

MENU/EXIT : Press the Menu/Exit / Pause button.

ENTER : Press the Enter button.

▲/▼ : Press the ▲ or ▼ button.

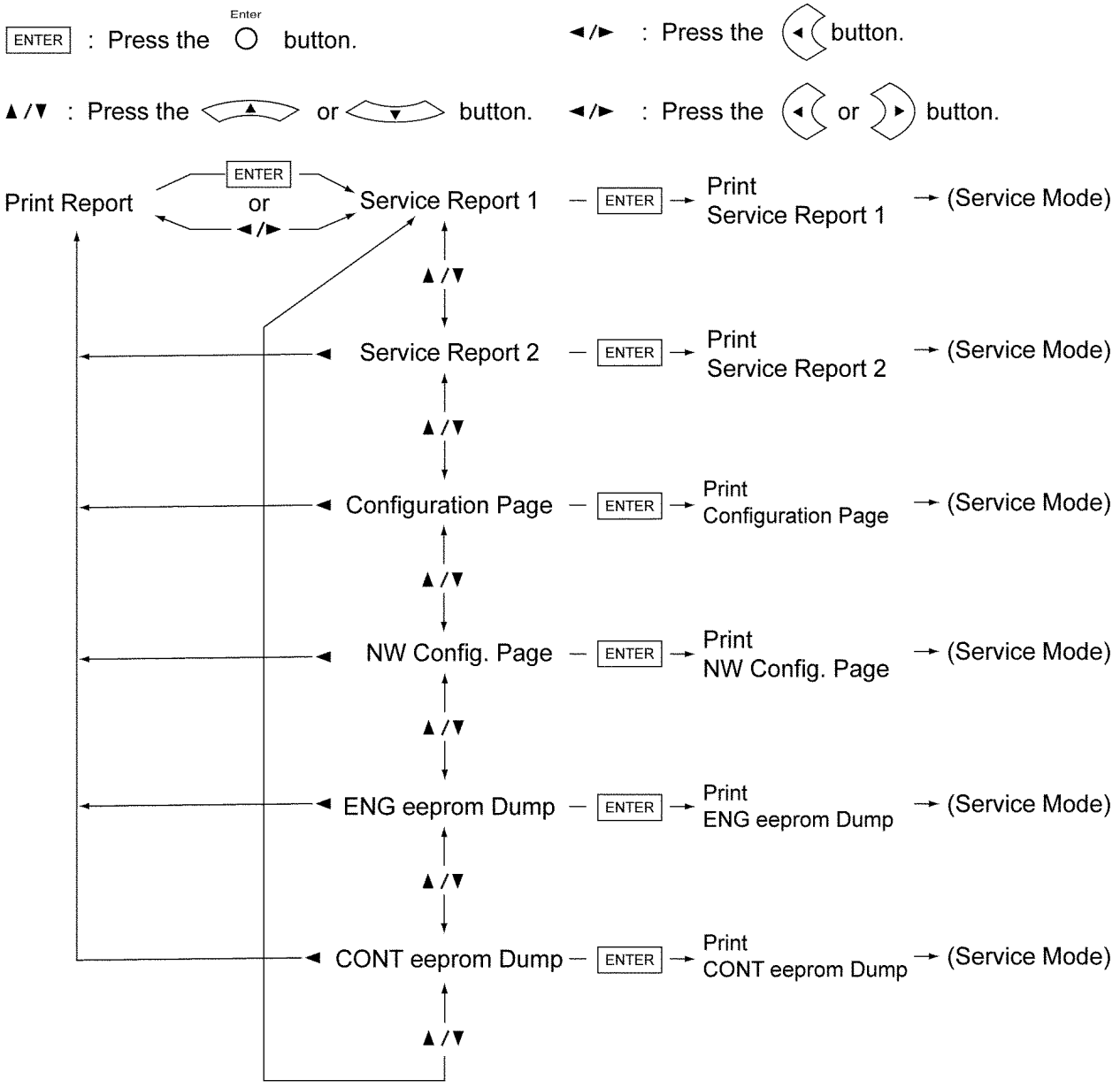
◄/► : Press the ◄ or ► button.



6.4. Print Report Item Menu

Menu Name	Description
Service Report 1	Information regarding JAMs, Service Error Log, etc. is printed.
Service Report 2	Information regarding the life count values of consumables and basic setting of engine is printed.
Configuration Page	General information regarding printer settings or configuration is printed.
NW Config. Page	General information regarding the basic setting regarding network configuration is printed.
ENG eeprom Dump	Hex Dump of the engine board EEPROM is printed.
CONT eeprom Dump	Hex Dump of the main control board EEPROM is printed.

① Print Report Item Menu



6.4.1. Printing Example of Service Report 1

The following is an example of what is printed when performing the “Service Report 1” menu.

Service Report 1 Page:1
Printer Name :DP-CL18 -M

Service Error Log(Maximum Number of Entries :5)

1: Service Error Log is empty
2: Service Error Log is empty
3: Service Error Log is empty
4: Service Error Log is empty
5: Service Error Log is empty

JAM Error Log(Maximum Number of Entries :4)

1: JAM Error Log is empty
2: JAM Error Log is empty
3: JAM Error Log is empty
4: JAM Error Log is empty

Cause of JAM Count

	Num of Times
JAM 1 (From Tray1)	0
JAM 1 (From Tray2)	0
JAM 1 (From Tray3)	0
JAM 1 (From MPT)	0
JAM 2 (From Tray)	0
JAM 2 (From MPT)	0
JAM 3 (From Tray)	0
JAM 3 (From MPT)	0
JAM 4	0
JAM 5	0
JAM 9	0
JAM 21	0
JAM 22	0
JAM 31	0
JAM 32	0

User Error Count

	Num of Times
MPT Motor Error	0

Service Error Count

	Num of Times
Printer Error 10	0
Printer Error 11	0
Printer Error 20	0
Printer Error 24	0
Printer Error 35	0
Printer Error 36	0
Printer Error 37	0
Printer Error 38	0
Printer Error 40	0
Printer Error 41	0
Printer Error 43	0
Printer Error 45	0
Printer Error 46	0
Printer Error 47	0
Printer Error 48	0
Printer Error 50	0
Printer Error 53	0
Printer Error 54	0
Printer Error 56	0
Printer Error 65	0
Printer Error 66	0
Printer Error 70	0
Printer Error 72	0
Printer Error 73	0
Printer Error 98	0

Mis-registaration Count

	Num of Times
Can't mesure Color Mis-registaration	0
Can't correct Color Mis-registaration	0

6.4.2. Printing Example of Service Report 2

The following is an example of what is printed when performing the "Service Report 2" menu.

Service Report 2 Page:1
Printer Name:DP-CL18 -M

******* General Information *******

Serial Number	
Controller Version	08020300
Engine Version	R 20 65 72 00

******* Engine Life Status *******

Total Page Count	0
Monochrome Page Count	0

******* Life Status *******

PC(K) Page Count	6
PC(Color) Page Count	6
TC Starter/Option	
TC(C)	Starter
TC(M)	Starter
TC(Y)	Starter
TC(K)	Starter
TC(C)Pixel Count	2382
TC(M)Pixel Count	2382
TC(Y)Pixel Count	2382
TC(K)Pixel Count	2382
FSR Page Count	0
TR Page Count	0
AU Page Count	4

******* Life Set Point *******

PC(K) Life Set Point:Expire(Page)	15000
PC(Color) Life Set Point:Expire(Page)	15000
Starter	
TC(K) Life Set Point:Expire(Pixel)	3972500
TC(C,M,Y) Life Set Point:Expire(Pixel)	3972500
Option	
TC(K-6K) Life Set Point:Expire(Pixel)	9534000
TC(C,M,Y-6K) Life Set Point:Expire(Pixel)	9534000
TC(C,M,Y-3K) Life Set Point:Expire(Pixel)	4767000
FSR Life Set Point:Expire(Page)	100000
TR Life Set Point:Expire(Page)	100000
AU Life Set Point:Expire(Page)	100000

******* Coverage of last page Status *******

Coverage of last page (C)	0 %
Coverage of last page (M)	0 %
Coverage of last page (Y)	0 %
Coverage of last page (K)	0 %

******* Total average coverage Status *******

Total average coverage (C)	0 %
Total average coverage (M)	0 %
Total average coverage (Y)	0 %
Total average coverage (K)	0 %

******* Controller Setting *******

Print Format	Letter
Language	English
PCL Symbol Set	PC-8
Power Save Level	Level II (Nap)
Device ID Code	ASCII

******* Position Setting *******

Top	0
Tray1 Left	0
MPT Left	0
Duplex Left	0

******* STR Setting *******

STR Bias Select	Center
Plain	0
Thin Paper	0
Transparency	0
Label	0
Coated Paper	0
Thick Paper	0
Card Stock	0
Envelope	0
JP Postcard	0
JP Postcard 2nd	0

******* Dev. Bias Setting *******

Paper/Other	
Cyan	0
Magenta	0
Yellow	0
Black	0
Transparency	
Cyan	0
Magenta	0
Yellow	0
Black	0

******* FSR Temp. Setting *******

Plain	0
Thin Paper	0
Transparency	0
Label	0
Coated Paper	0
Thick Paper	0
Card Stock	0
Envelope	0
JP Postcard	0
JP Postcard 2nd	0

6.4.3. Printing Example of Configuration Page

The following is an example of what is printed when performing the "Configuration Page" menu.

Configuration Page — Page:1
Printer Name:DP-CL18 -M

General Information

Serial Number	
MAC Address	00:80:F0:13:7E:55
Controller Version	PJWP00HP1M
	08020300 (78D4)
Engine Version	R 20 65 72 00
Memory Size	
Total Size	128 MB
Standard Slot	128 MB
Optional Slot	0 MB
Hard Disk Drive(HDD)	Not Installed
Automatic Duplex Unit	Installed

Consumable

Cyan Toner Cartridge(TC-C)	100% remaining (2500 pages) *1
Magenta Toner Cartridge(TC-M)	100% remaining (2500 pages) *1
Yellow Toner Cartridge(TC-Y)	100% remaining (2500 pages) *1
Black Toner Cartridge(TC-K)	100% remaining (2500 pages) *1
Color Print Cartridge(PC-Color)	100% remaining
Black Print Cartridge(PC-Black)	100% remaining
Waste Toner Cartridge(WTC)	Useable
Accumulator Unit(AU)	100% remaining
Transfer Roller(TR)	100% remaining
Fuser Unit(FSR)	100% remaining
Image Area(Last)	
Cyan	0 %
Magenta	0 %
Yellow	0 %
Black	8 %
Image Area(Average)	
Cyan	0 %
Magenta	0 %
Yellow	0 %
Black	17 %

Maintenance

Page Count	
Total Page	1 pages
Color Page	0 pages
Mono Page	1 pages
Simulated Page *2	
Color Page	2 pages
Mono Page	2 pages
Toner Capacity	
Cyan Toner Cartridge(TC-C)	Starter
Magenta Toner Cartridge(TC-M)	Starter
Yellow Toner Cartridge(TC-Y)	Starter
Black Toner Cartridge(TC-K)	Starter

Humidity	: 30 %
Temperature	: 23 °C / 73 °F

*1 Calculated pages printed at 5% coverage.
*2 Calculated page count at 5% coverage per color.

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Configuration Page — Page:2
Printer Name:DP-CL18 -M

Color Calibration

Offset	0 (-5 to 5)
Cyan	0 (-5 to 5)
Magenta	0 (-5 to 5)
Yellow	0 (-5 to 5)
Black	0 (-5 to 5)

Tray

Paper Source	Auto
Media Type	
Tray1	Plain Paper
MPT	Plain Paper
Paper Size	
Tray1	A4
MPT	Letter
Position Setting	
Top	0 (-30 to 30)
Tray1 Left	0 (-15 to 15)
MPT Left	0 (-15 to 15)
Duplex Left	0 (-15 to 15)

Print

Copies	1
Print Format	Letter
Automatic Duplex	Off
Binding	Long Edge
Mutual A4/Letter	Off
Custom Paper Setting	
Custom Size Unit	Inch
Custom X Size	8.5 inch
Custom Y Size	14.0 inch
Image Reduction	On
Toner Save	Off
Error Page Print	Off

PCL

Orientation	Portrait
A4 Wide	Off
Lines Per Page	60
PCL Font Menu	
PCL Font Source	Resident
PCL Font Number	0
PCL Font Pitch	10.00
PCL Symbol Set	PC-8
Line Breaks	CR=CR:LF=LF:FF=FF

NW Protocol Setup

Link Speed & Duplex	Auto
DHCP	Enabled
IP Address	0 . 0 . 0 . 0
Subnet Mask	0 . 0 . 0 . 0
Default Gateway	0 . 0 . 0 . 0

Receive Setting

Time Out	30 seconds
Parallel Speed	High
Receive Buffer Size	Auto

Adjust to Media

Plain Paper	0 (-15 to 15)
Thin Paper	0 (-15 to 15)
Transparency	0 (-15 to 15)
Label	0 (-15 to 15)
Coated Paper	0 (-15 to 15)
Thick Paper	0 (-15 to 15)
Card Stock	0 (-15 to 15)
Envelope	0 (-15 to 15)
JP Postcard	0 (-15 to 15)
JP Postcard 2nd	0 (-15 to 15)

System

Language	English
Power Save	On
Auto Continue	Off

Mono Page Detect

Mono Page Detect	On

6.4.4. Printing Example of ENG eeprom Dump

```
Engine EEPROM Hex Dump   Page 0001
Address   +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +A +B +C +D +E +F      0123456789ABCDEF
00000000: DD 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000010: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000020: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000030: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000040: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 02      ................
00000050: 01 01 02 01 01 02 01 01 02 01 01 02 01 01 02 01      ................
00000060: 01 02 01 01 02 01 01 02 01 01 02 01 01 02 01 01      ................
00000070: 02 01 01 02 01 01 02 01 01 02 01 01 02 01 01 02      ................
00000080: 01 01 02 01 01 02 01 01 02 01 01 02 01 01 02 01      ................
00000090: 01 02 01 01 02 01 01 02 01 01 02 01 01 02 01 01      ................
000000A0: 02 01 01 02 01 01 02 01 01 02 01 01 02 01 01 02      ................
000000B0: 01 01 02 01 01 02 01 01 02 01 01 02 01 01 02 01      ................
000000C0: 01 02 01 01 02 01 01 02 01 01 01 02 01 01 01 01      ................
000000D0: 02 01 01 02 01 01 02 01 01 02 01 01 02 01 01 02      ................
000000E0: 01 01 02 01 01 02 01 01 02 01 01 02 01 01 02 01      ................
000000F0: 01 02 01 01 02 01 01 02 01 01 02 01 01 02 01 01      ................
00000100: 00 13 DB 00 13 DA 00 07 45 00 07 44 96 00 02 3D      ........E..D...=
00000110: 57 96 00 02 3D 57 D5 00 03 AB 27 D5 00 03 AB 27      W...=W....'....'
00000120: 5D 00 17 46 5C 00 17 45 3D 00 3D 3C 00 3C 0A 20      ]..F\..E=.=<.<.
00000130: 26 3E 86 0A 20 26 3E 86 1A 20 20 DA 18 20 20 D8      &>.. &>..  ..  .
00000140: D9 D9 DA DA A6 20 24 17 4B A6 20 24 17 4B C5 20      ..... $.K. $.K.
00000150: 20 85 C4 20 20 84 85 85 84 84 B9 0C AD B8 0C AC       ..  ............
00000160: 5E 00 68 73 83 5E 00 68 73 83 00 00 00 00 B3 09      ^.hs.^.hs.......
00000170: AA B4 09 AB C4 00 60 47 1D C4 00 60 47 1D 00 00      ......`G...`G...
00000180: 00 00 2D 00 2D 2E 00 2E 04 00 00 BA 4A 04 00 00      ..-.-........J...
00000190: BA 4A 00 00 00 00 C4 09 BB C5 09 BC 52 00 5C 39      .J..........R.\9
000001A0: BD 52 00 5C 39 BD 00 00 00 00 EC 00 13 D9 EB 00      .R.\9...........
000001B0: 13 D8 2E 00 10 C1 5D 2E 00 10 C1 5D EC 00 13 D9      ......]....]....
000001C0: EB 00 13 D8 EC 00 13 D9 EB 00 13 D8 71 95 26 C6      ............q.&.
000001D0: F0 71 95 26 C6 F0 11 35 26 C6 F0 11 35 26 C6 F0      .q.&...5&...5&..
000001E0: 11 35 26 C6 F0 11 35 26 C6 F0 11 35 26 C6 F0 11      .5&...5&...5&...
000001F0: 35 26 C6 F0 EB 00 29 BB 07 EB 00 29 BB 07 0B 00      5&....)....)....
00000200: 1F 7C 70 0B 00 1F 7C 70 9B 00 20 C2 B9 9B 00 20      .|p...|p.. .... 
00000210: C2 B9 E6 00 1D BC 0D E6 00 1D BC 0D 13 00 10 9E      ................
00000220: 65 13 00 10 9E 65 0A 20 26 3E 86 0A 20 26 3E 86      e....e. &>.. &>.
00000230: A6 20 24 17 4B A6 20 24 17 4B 2E 00 10 C1 5D 2E      . $.K. $.K....].
00000240: 00 10 C1 5D 94 00 00 94 94 00 00 94 36 00 01 35      ...]........6..5
00000250: 35 00 01 34 62 00 01 61 62 00 01 61 ED 00 00 ED      5..4b..ab..a....
00000260: ED 00 00 ED 12 00 00 12 12 00 00 12 95 00 00 95      ................
00000270: 95 00 00 95 33 00 00 33 33 00 00 33 11 00 00 11      ....3..33..3....
00000280: 11 00 00 11 62 00 02 60 62 00 02 60 9E 00 00 9E      ....b..`b..`....
00000290: 9E 00 00 9E 00 00 00 00 00 00 00 00 00 00 00 00      ................
000002A0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
000002B0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
000002C0: 00 00 00 00 00 00 00 00 00 00 00 00                  ............
000002D0: 00 00 00 00 00 00 00 00 00 00
000002E0: 00 00 00 00 00 00 00 00
          00 00 00 00 00 00
```

6.4.5. Printing Example of CONT eeprom Dump

```
Controller EEPROM Hex Dump   Page 0001
Address   +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +A +B +C +D +E +F      0123456789ABCDEF
00000000: 44 50 2D 43 4C 31 38 2F 31 38 4D 20 00 02 43 4D      DP-CL18/18M ..CM
00000010: 00 01 02 03 03 04 05 06 07 00 00 00 00 00 00 00      ................
00000020: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000030: 00 00 00 00 00 01 02 03 03 04 05 06 07 00 00 00      ................
00000040: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000050: 00 00 00 00 00 00 00 00 00 01 02 03 03 04 05 06      ................
00000060: 07 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000070: 00 00 00 00 00 00 00 00 00 00 00 00 00 01 02 03      ................
00000080: 03 04 05 06 07 00 00 00 00 00 00 00 00 00 00 00      ................
00000090: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
000000A0: 00 01 02 03 03 04 05 06 07 00 00 00 00 00 00 00      ................
000000B0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
000000C0: 00 00 00 00 00 01 02 03 03 04 05 06 07 00 00 00      ................
000000D0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
000000E0: 00 00 00 00 00 00 00 00 00 01 02 03 03 04 05 06      ................
000000F0: 07 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000100: 00 00 00 00 00 00 00 00 00 00 00 00 00 01 02 03      ................
00000110: 03 04 05 06 07 00 00 00 00 00 00 00 00 00 00 00      ................
00000120: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000130: 00 01 02 03 03 04 05 06 07 00 00 00 00 00 00 00      ................
00000140: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000150: 00 00 00 00 00 01 02 03 03 04 05 06 07 00 00 00      ................
00000160: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000170: 00 00 00 00 00 00 00 00 00 01 02 03 03 04 05 06      ................
00000180: 07 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000190: 00 00 00 00 00 00 00 00 00 00 00 00 00 01 02 03      ................
000001A0: 03 04 05 06 07 00 00 00 00 00 00 00 00 00 00 00      ................
000001B0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
000001C0: 00 01 02 03 03 04 05 06 07 00 00 00 00 00 00 00      ................
000001D0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
000001E0: 00 00 00 00 00 01 02 03 03 04 05 06 07 00 00 00      ................
000001F0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000200: 00 00 00 00 00 00 00 00 00 01 02 03 03 04 05 06      ................
00000210: 07 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000220: 00 00 00 00 00 00 00 00 00 00 00 00 00 01 02 03      ................
00000230: 03 04 05 06 07 00 00 00 00 00 00 00 00 00 00 00      ................
00000240: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000250: 43 4D 00 01 02 03 03 04 05 06 07 00 00 00 00 00      CM..............
00000260: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000270: 00 00 00 00 00 00 00 01 02 03 03 04 05 06 07 00      ................
00000280: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000290: 00 00 00 00 00 00 00 00 00 01 02 03 03 04 05 06      ................
000002A0: 07 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
000002B0: 00 00 00 00 00 00 00 00 00 00 00 00 00 01 02 03      ................
000002C0: 03 04 05 06 07 00 00 00 00 00 00 00 00 00 00 00      ................
000002D0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
000002E0: 00 00 00 00 00 00 00 00 00 01 02 03 03 04 05 06      ................
000002F0: 07 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000300: 00 00 00 00 00 00 00 00 00 00 00 00 00 01 02 03      ................
00000310: 03 04 05 06 07 00 00 00 00 00 00 00 00 00 00 00      ................
00000320: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000330: 00 01 02 03 03 04 05 06 07 00 00 00 00 00 00 00      ................
00000340: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000350: 00 00 00 00 00 01 02 03 03 04 05 06 07 00 00 00      ................
00000360: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000370: 00 00 00 00 00 00 00 00 00 01 02 03 03 04 05 06      ................
00000380: 07 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
00000390: 00 00 00 00 00 00 00 00 00 00 00 00 00 01 02 03      ................
000003A0: 03 04 05 06 07 00 00 00 00 00 00 00 00 00 00 00      ................
000003B0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
000003C0: 00 01 02 03 03 04 05 06 07 00 00 00 00 00 00 00      ................
000003D0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00      ................
000003E0: 00 00 00 00 00 01 02 03 03 04 05 06 07 00 00 00      ................
000003F0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01      ................
```

6.4.6. Printing Example of NW Config. Page

The following is an example of what is printed when performing the “NW Config. Page” menu.

NW Config. Page Page:1
Printer Name:DP-CL18 -M

General Information
MAC Address 00:80:F0:13:7E:55
Link Speed & Duplex
Defined Auto
Selected Link Down
Session Time Out 60 seconds

TCP/IP
Protocol Enabled
FTP/LPD Banner Disabled
FTP Enabled
TELNET Enabled

IPv4
DHCP Enabled
RARP Disabled
DHCP Server Address 0 . 0 . 0 . 0
IP Address 0 . 0 . 0 . 0
Subnet Mask 0 . 0 . 0 . 0
Default Gateway 0 . 0 . 0 . 0
DNS
Preferred Server 0 . 0 . 0 . 0
Alternate Server 0 . 0 . 0 . 0
WINS
Preferred Server 0 . 0 . 0 . 0
Alternate Server 0 . 0 . 0 . 0

IP Filtering
IP Filtering Disabled
Mode Accept
Filter 1 0 . 0 . 0 . 0 ... 0 . 0 . 0 . 0
Filter 2 0 . 0 . 0 . 0 ... 0 . 0 . 0 . 0
Filter 3 0 . 0 . 0 . 0 ... 0 . 0 . 0 . 0
Filter 4 0 . 0 . 0 . 0 ... 0 . 0 . 0 . 0

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NW Config. Page
Printer Name:DP-CL18

Page:2
-M

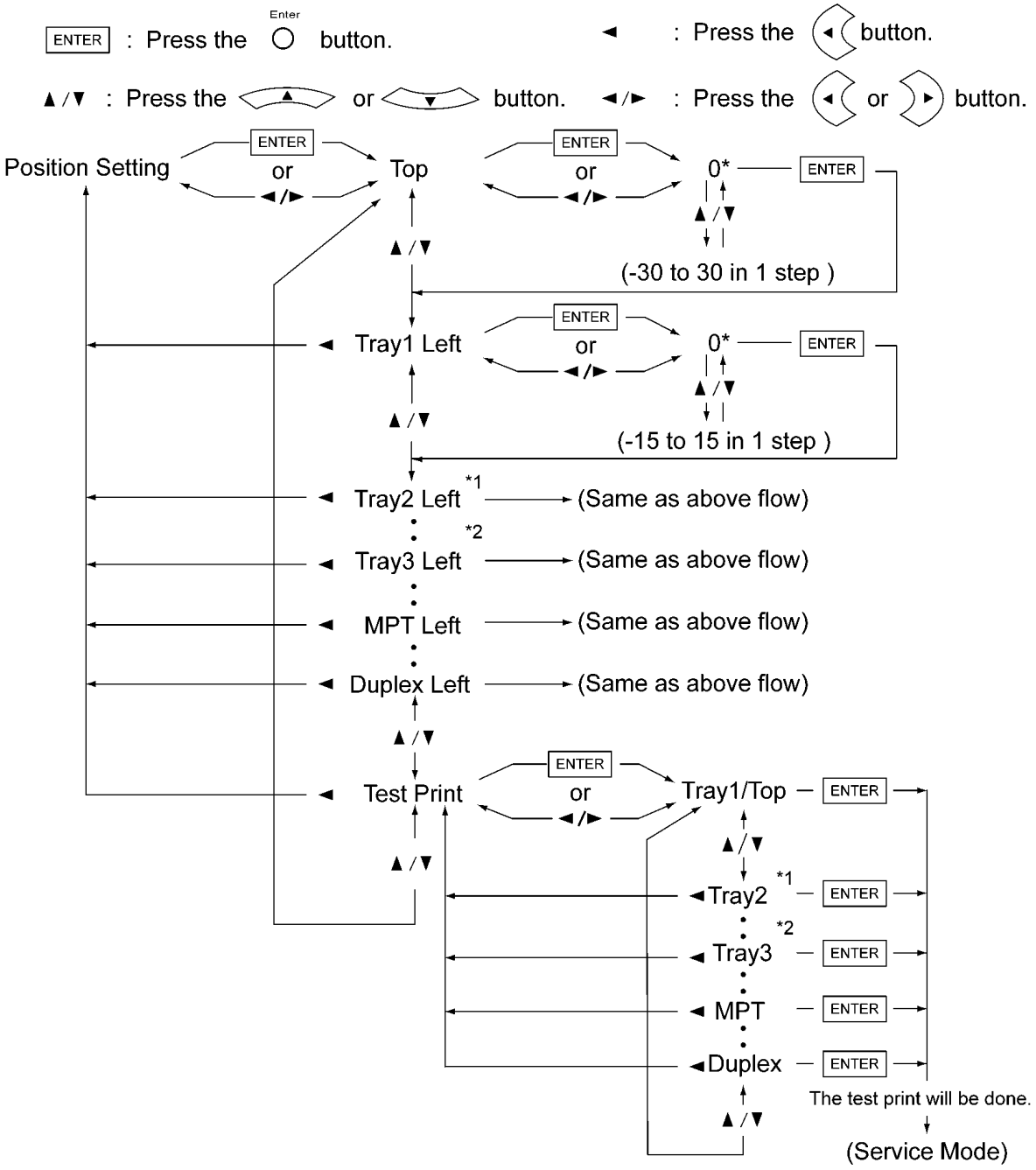
IPv6	
IPv6 Protocol	Enabled
Address	
Link-Local	FE80::280:F0FF:FE13:7E55
SMB(NetBIOS)	
NetBIOS over TCP/IP	Enabled
NetBEUI	Enabled
Browse Master	Enabled
Computer Name	DPCL137E55
Workgroup	DPCL-Printer
Comment	Panasonic DP-CL18
NetWare	
NetWare	Enabled
Frame Type	
Defined	802.2
Selected	802.2
Printer Name	DPCL137E55-Printer
Operation Mode	PSERVER
Print Server Name	DPCL137E55
Job Polling Interval	4 seconds
Bindery Mode	Enabled
NDS	
Tree	
Context	

6.5. Position Setting Item Menu

Menu Name	Description
Top	This mode is used to adjust the top print position, primarily when moving the printer, installing the optional paper feeder, replacing the laser scanning unit or replacing the engine board.
Tray 1 Left	This mode is used to adjust the left print position of the printed media loaded in the Tray 1, primarily when moving the printer, installing the optional paper feeder, replacing the laser scanning unit or replacing the engine board.
Tray 2 Left	This mode is used to adjust the left print position of the printed media loaded in the Tray 2, primarily when moving the printer, installing the optional paper feeder, replacing the laser scanning unit or replacing the engine board.
Tray 3 Left	This mode is used to adjust the left print position of the printed media loaded in the Tray 3, primarily when moving the printer, installing the optional paper feeder, replacing the laser scanning unit or replacing the engine board.
MPT Left	This mode is used to adjust the left print position of the printed media loaded in the multi-purpose tray, primarily when moving the printer, installing the optional paper feeder, replacing the laser scanning unit or replacing the engine board.
Duplex Left	This mode is used to adjust the left print position of the printed media on the back the page, primarily when moving the printer, installing the optional paper feeder, replacing the laser scanning unit or replacing the engine board.
Test Print	The lines to check the top, left and back side left print positions are printed.

② Position Setting Item Menu

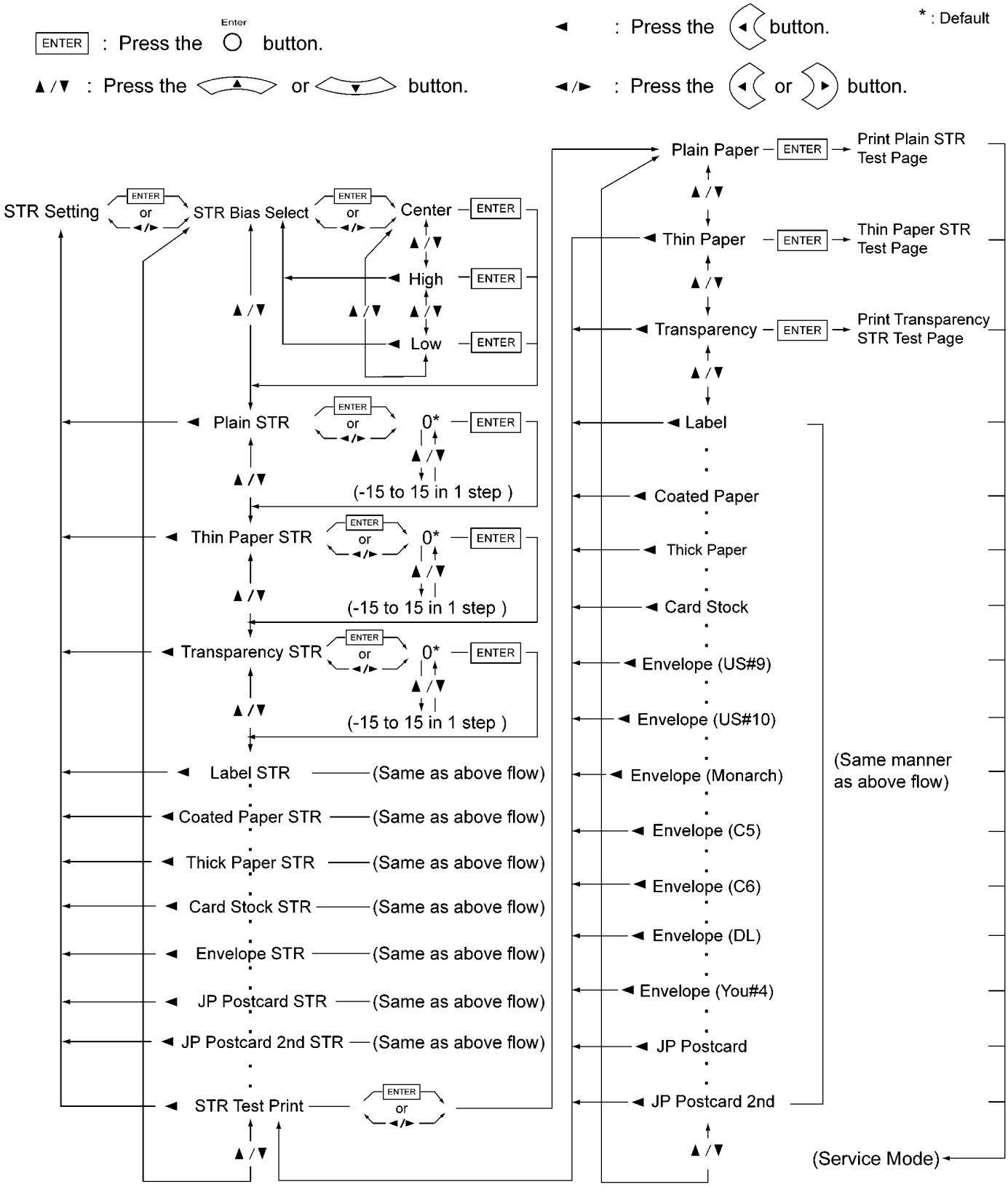
* : Default
*1: This menu is displayed when an optinal paper feeder is installed.
*2: This menu is displayed when two optinal paper feeders are installed.



6.6. STR Setting Item Menu

The following service menus are used to adjust the toner density for each media (Plain, Thin Paper, Transparency, Label, Coated Paper, Thick Paper, Card Stock, Envelope, JP Postcard and JP Postcard 2nd).

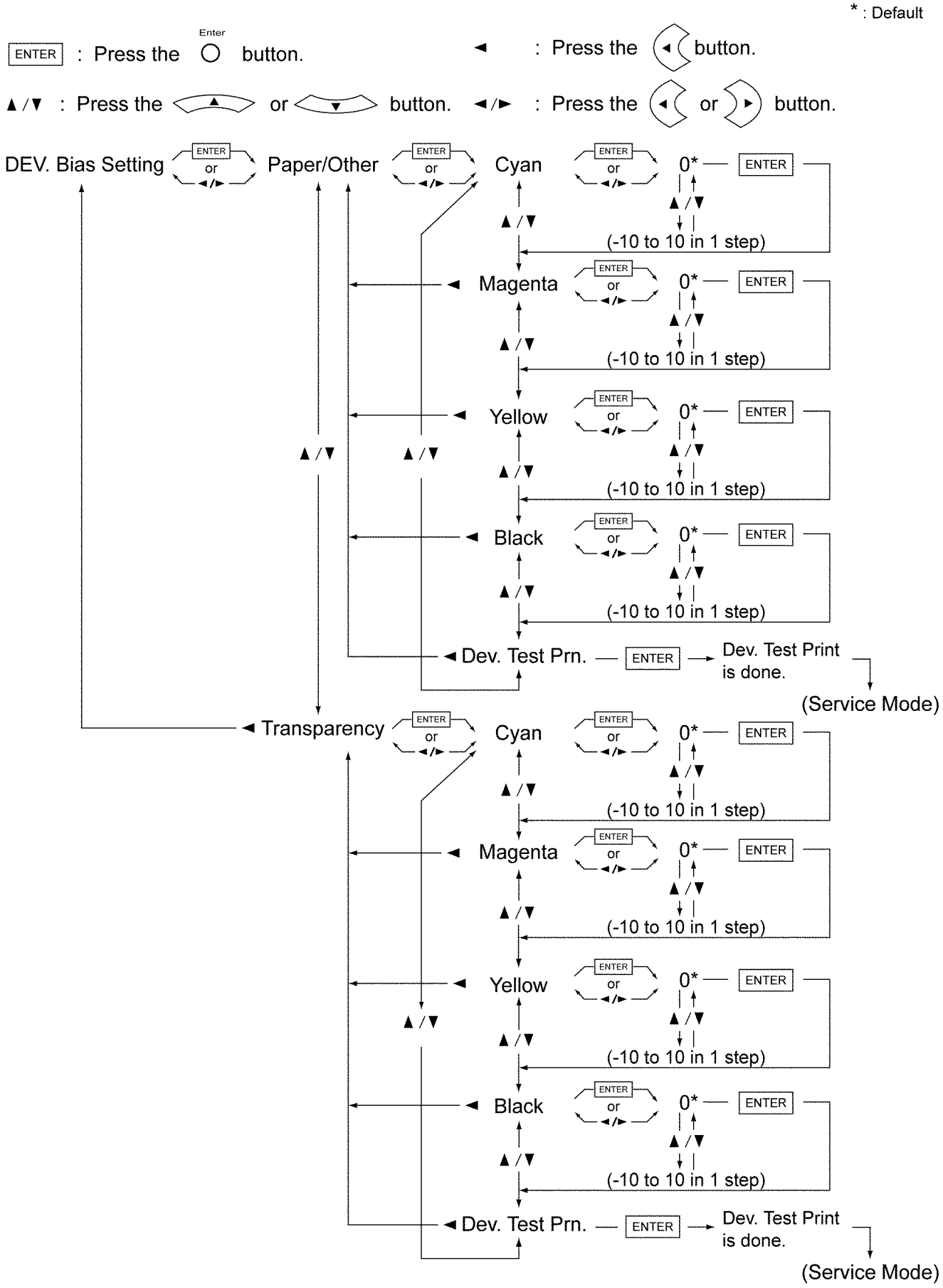
③ STR Setting Item Menu



6.7. DEV. Bias Item Menu

The following service menus are used to adjust the toner density for all color toner (Cyan, Magenta, Yellow, Black).

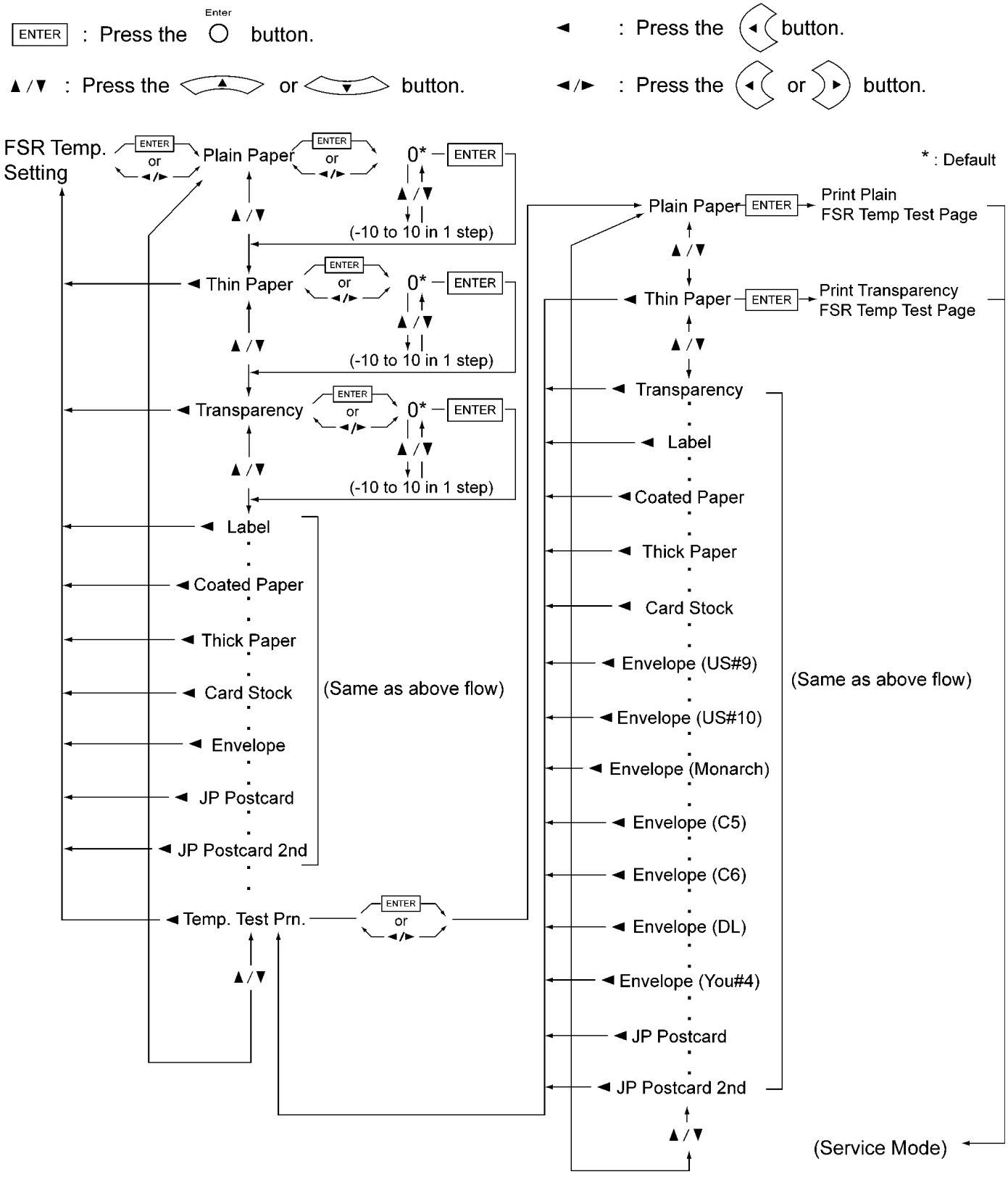
④ DEV. Bias Item Menu



6.8. FSR Temp. Setting Item Menu

The following service menus are used to adjust the fusing temperature for each media (Plain, Thin, Transparency, Label, Coated Paper, Thick, Card, Envelope, JP Postcard and JP Postcard 2nd.)

⑤ FSR Temp. Setting Item Menu

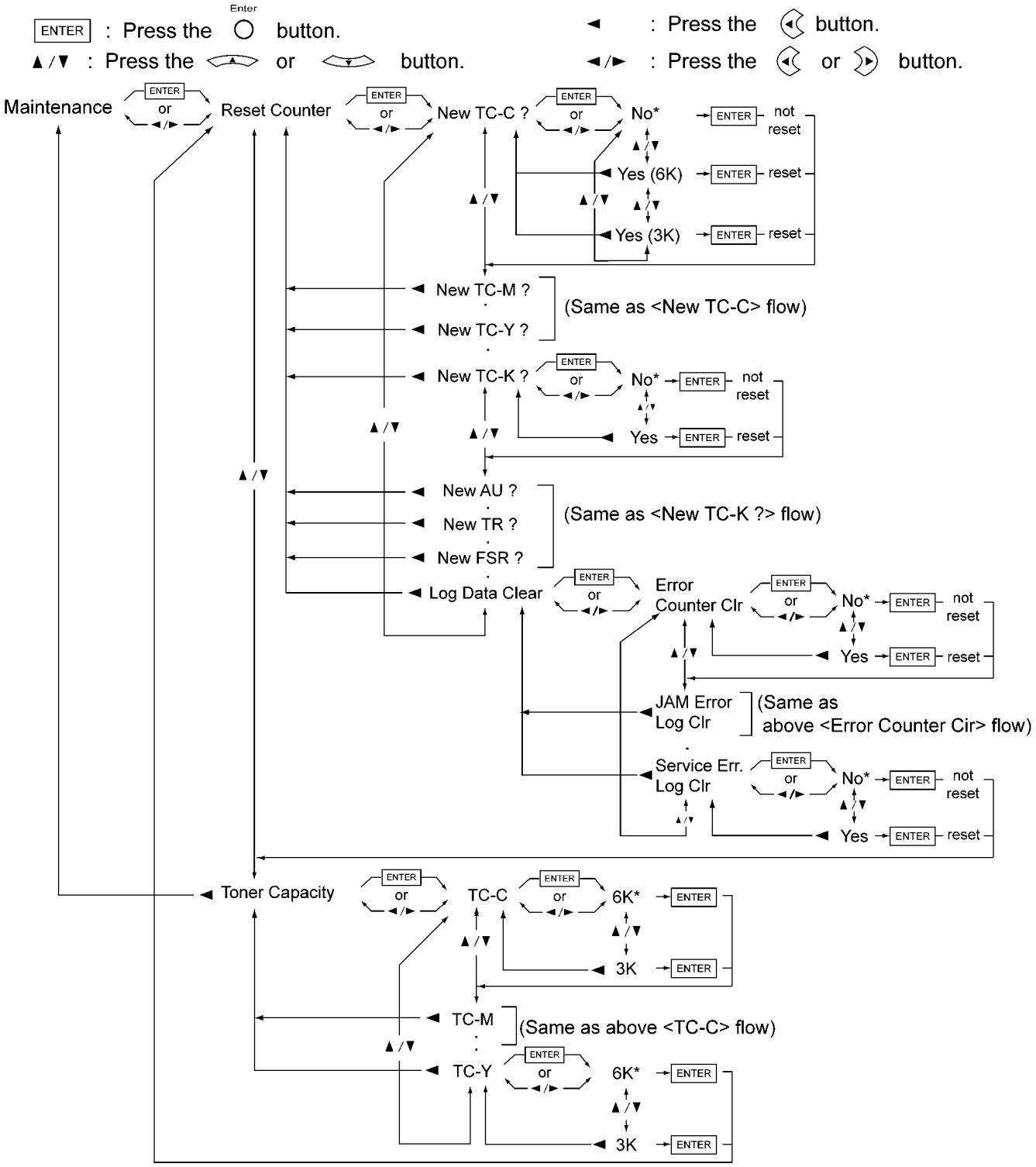


6.9. Maintenance Item Menu

Menu Name	Description
New TC-C?	Cyan Toner Cartridge counter is reset.
New TC-M?	Magenta Toner Cartridge counter is reset.
New TC-Y?	Yellow Toner Cartridge counter is reset.
New TC-K?	Black Toner Cartridge counter is reset.
New AU?	Accumulator Unit counter is reset.
New TR?	Second Transfer Roller counter is reset
New FSR?	Fuser Unit counter is reset.
Error Counter Clr	All counters, printed by the Print Report in the service mode, are reset.
JAM Error Log Clr	All JAM Error Logs, printed by the Print Report in the service mode, are reset.
Service Err.Log Clr	All Service Error Logs, printed by the Print Report in the service mode, are reset.

⑥ Maintenance Item Menu

* : Default



6.10. ENG Serial Number Item Menu

The Engine Serial Number (eleven figures) is input using this menu.

⑦ ENG Serial Number Menu

* : Default

ENTER : Press the Enter button.

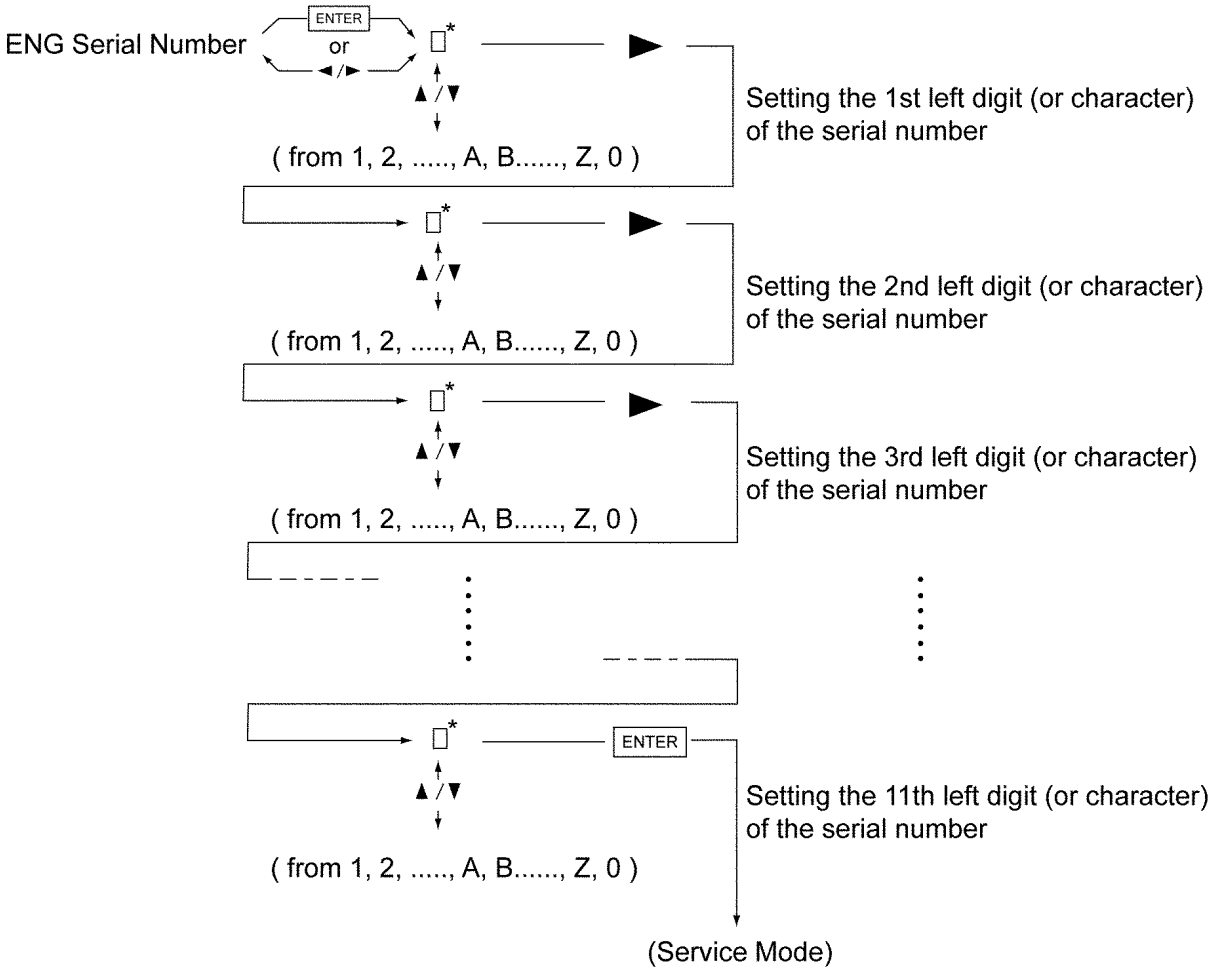
▲/▼ : Press the ▲ or ▼ button.

► : Press the ► button.

◄ : Press the ◄ button.

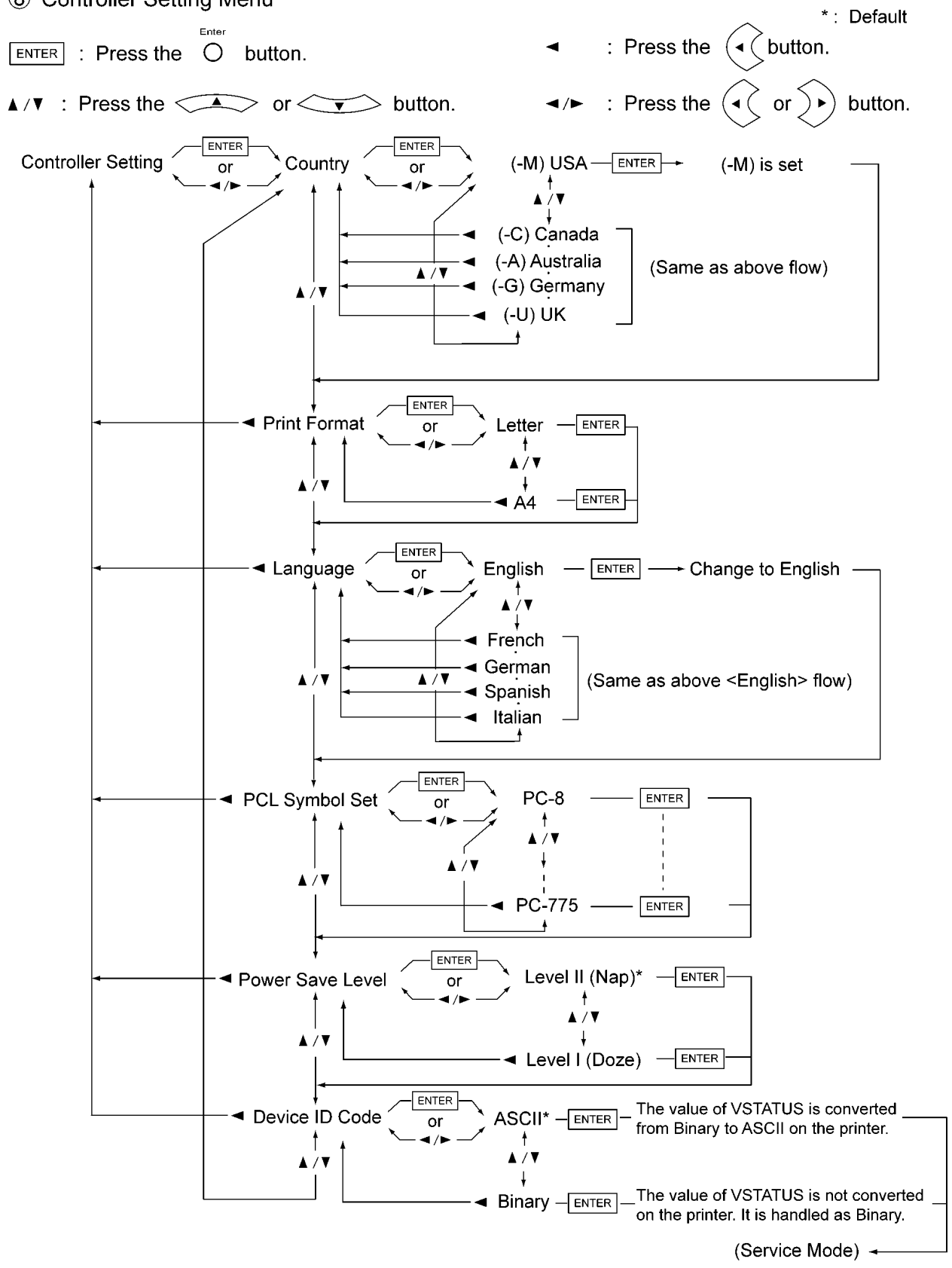
◄/► : Press the ◄ or ► button.

□* : Space


ENG Serial Number
ENTER
or
◄/►
□*
▲/▼
(from 1, 2, ..., A, B....., Z, 0)
Setting the 1st left digit (or character) of the serial number
Setting the 2nd left digit (or character) of the serial number
Setting the 3rd left digit (or character) of the serial number
Setting the 11th left digit (or character) of the serial number
(Service Mode)

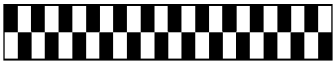
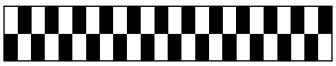
6.11. Controller Setting Item Menu

Menu Name	Description
Country	Application area/country is set.
Print Format	Default Paper Size is set.
Language	Default Language is set.
PCL Symbol Set	Default Symbol Set is set.
Power Save Level	Default Power Save Level is set.



6.12. Panel Test Item Menu

This menu is used to check the LCD. Select the “Panel Test “and press the Enter button. Confirm that the LCD messages/patterns shown in the following table are displayed.

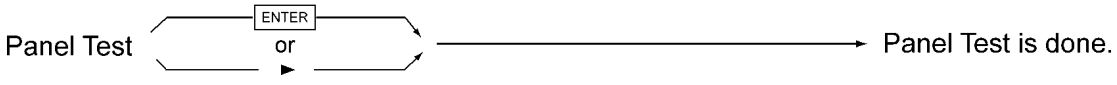
Step No.	Press the following button	LCD Message/Pattern	Remarks
1	(Select the Panel Test menu by pressing the Enter or ▶ button.)		
2	ENTER		
3	ENTER	ON-OFF-OFF-OFF Push Down Key	Power LED is lit.
4	▼	OFF-ON-OFF-OFF Push Up Key	On Line LED is lit.
5	▲	OFF-OFF-ON-OFF Push Continue Key	Ready LED is lit.
6	▶	OFF-OFF-OFF-ON Push Cancel Key	Error LED is lit.
7	◀	OFF-OFF-OFF-OFF Push Enter Key	All LEDs are turned off.
8	ENTER	Service Mode	

⑨ Panel Test Menu

* : Default

ENTER : Press the Enter button.

▶ : Press the ▶ button.



6.13. Engine Test Item Menu

⑩ Engine Test Item Menu

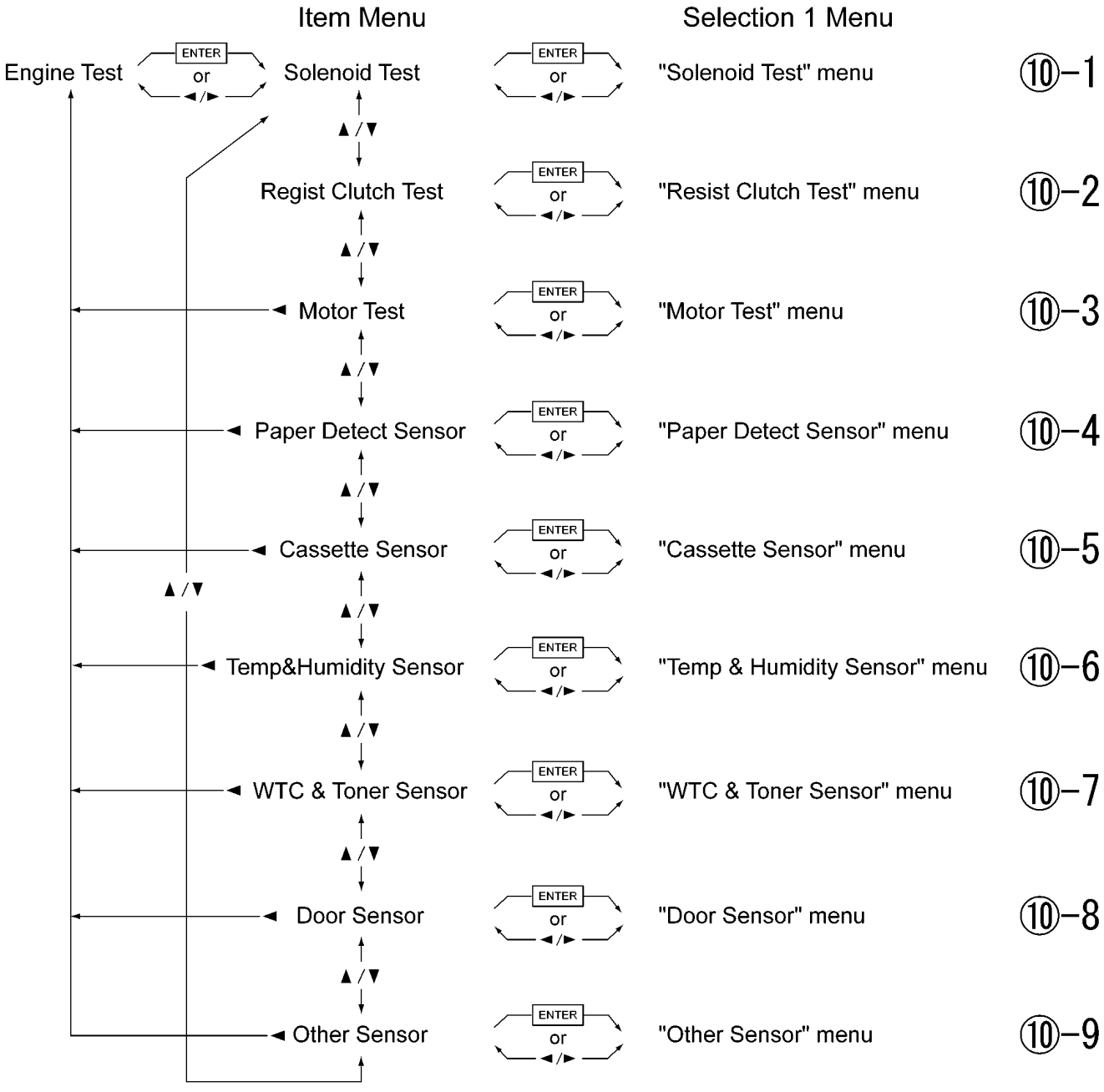
* : Default

ENTER : Press the Enter ○ button.

◄ : Press the ◄ button.

▲/▼ : Press the ▲ or ▼ button.

◄/► : Press the ◄ or ► button.



6.13.1. Solenoid TEST

⑩-1 Solenoid Test Item Menu

* : Default

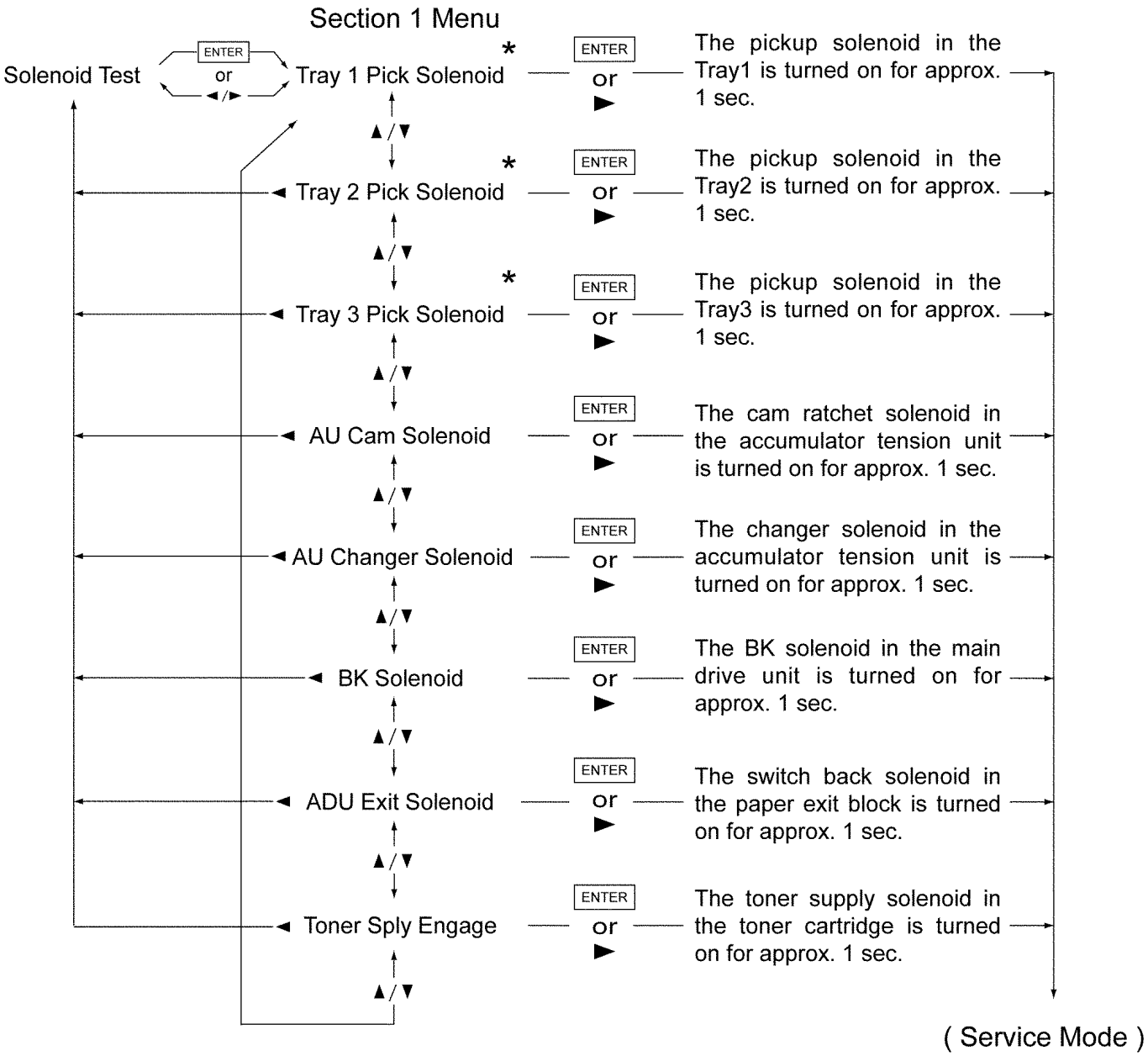
ENTER : Press the Enter button.

▲/▼ : Press the ▲ or ▼ button.

◄ : Press the ◄ button.

◄/► : Press the ◄ or ► button.

► : Press the ► button.


Section 1 Menu
Solenoid Test
ENTER
or
◄/►
Tray 1 Pick Solenoid *
Tray 2 Pick Solenoid *
Tray 3 Pick Solenoid *
AU Cam Solenoid
AU Changer Solenoid
BK Solenoid
ADU Exit Solenoid
Toner Sply Engage
▲/▼
ENTER
or
►
The pickup solenoid in the Tray1 is turned on for approx. 1 sec.
The pickup solenoid in the Tray2 is turned on for approx. 1 sec.
The pickup solenoid in the Tray3 is turned on for approx. 1 sec.
The cam ratchet solenoid in the accumulator tension unit is turned on for approx. 1 sec.
The changer solenoid in the accumulator tension unit is turned on for approx. 1 sec.
The BK solenoid in the main drive unit is turned on for approx. 1 sec.
The switch back solenoid in the paper exit block is turned on for approx. 1 sec.
The toner supply solenoid in the toner cartridge is turned on for approx. 1 sec.
(Service Mode)

* Caution: Before performing this test, remove the paper supply tray.

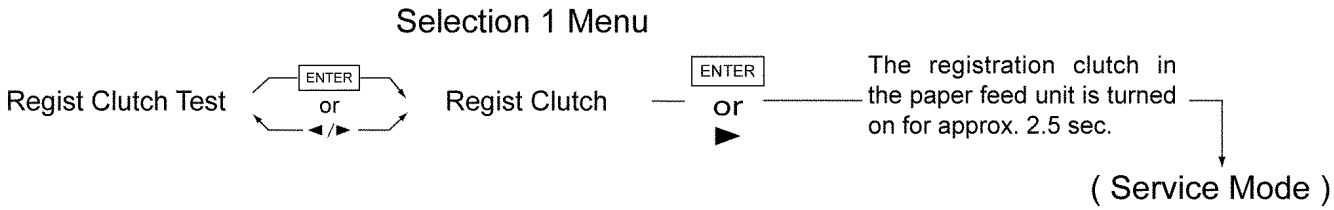
6.13.2. Regist Clutch TEST

⑩-2 Regist Clutch Item Menu

ENTER : Press the Enter ○ button.

◄/► : Press the ◄ or ► button.

► : Press the ► button.



6.13.3. Motor TEST

⑩-3 Motor Test Item Menu

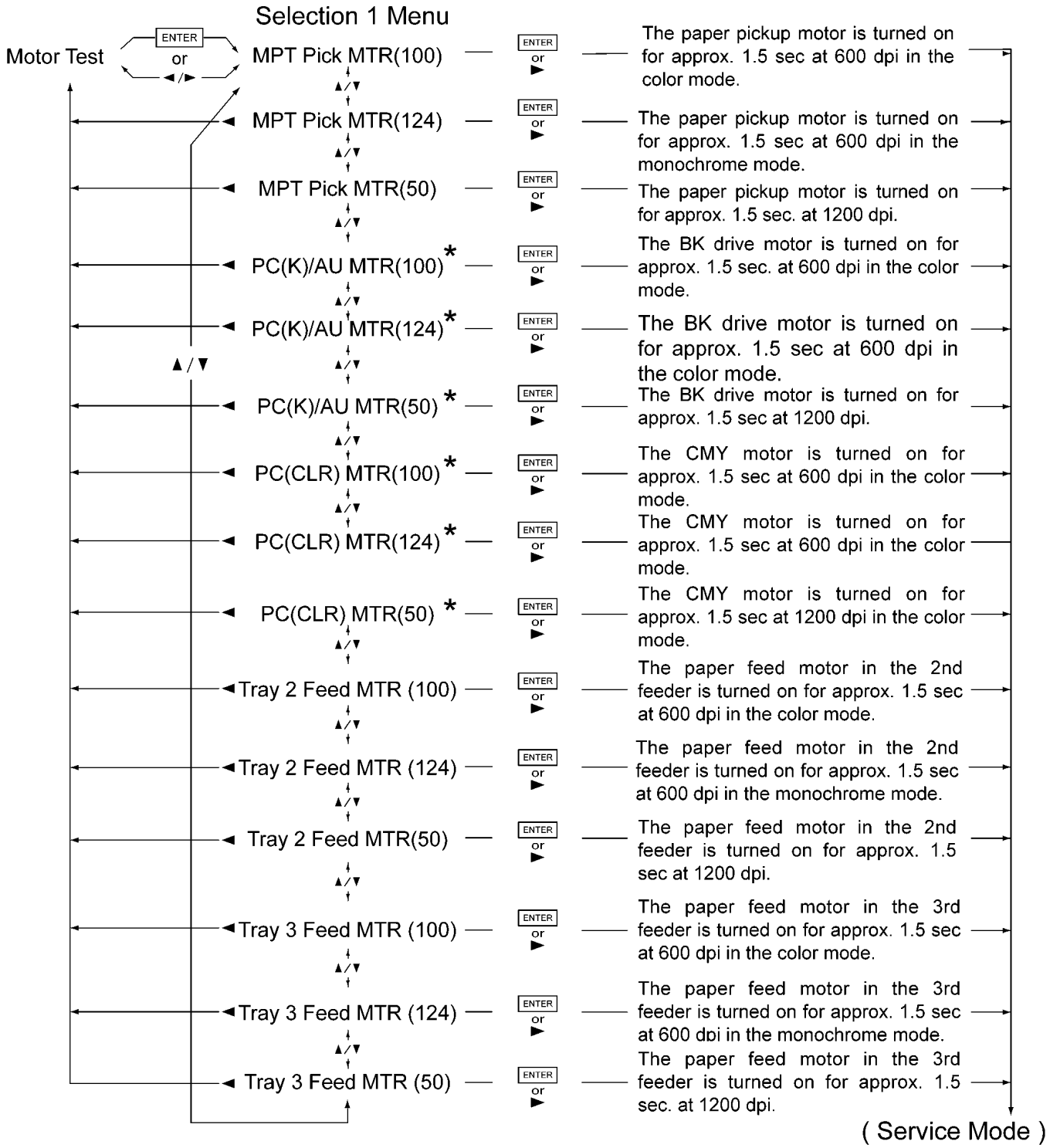
ENTER : Press the Enter button.

▲/▼ : Press the ▲ or ▼ button.

► : Press the ► button.

◄ : Press the ◄ button.

◄/► : Press the ◄ or ► button.


Selection 1 Menu
Motor Test
ENTER
or
◄/►
MPT Pick MTR(100)
The paper pickup motor is turned on for approx. 1.5 sec at 600 dpi in the color mode.
MPT Pick MTR(124)
The paper pickup motor is turned on for approx. 1.5 sec at 600 dpi in the monochrome mode.
MPT Pick MTR(50)
The paper pickup motor is turned on for approx. 1.5 sec. at 1200 dpi.
PC(K)/AU MTR(100)*
The BK drive motor is turned on for approx. 1.5 sec. at 600 dpi in the color mode.
PC(K)/AU MTR(124)*
The BK drive motor is turned on for approx. 1.5 sec at 600 dpi in the color mode.
PC(K)/AU MTR(50)*
The BK drive motor is turned on for approx. 1.5 sec at 1200 dpi.
PC(CLR) MTR(100)*
The CMY motor is turned on for approx. 1.5 sec at 600 dpi in the color mode.
PC(CLR) MTR(124)*
The CMY motor is turned on for approx. 1.5 sec at 600 dpi in the color mode.
PC(CLR) MTR(50)*
The CMY motor is turned on for approx. 1.5 sec at 1200 dpi in the color mode.
Tray 2 Feed MTR (100)
The paper feed motor in the 2nd feeder is turned on for approx. 1.5 sec at 600 dpi in the color mode.
Tray 2 Feed MTR (124)
The paper feed motor in the 2nd feeder is turned on for approx. 1.5 sec at 600 dpi in the monochrome mode.
Tray 2 Feed MTR(50)
The paper feed motor in the 2nd feeder is turned on for approx. 1.5 sec at 1200 dpi.
Tray 3 Feed MTR (100)
The paper feed motor in the 3rd feeder is turned on for approx. 1.5 sec at 600 dpi in the color mode.
Tray 3 Feed MTR (124)
The paper feed motor in the 3rd feeder is turned on for approx. 1.5 sec at 600 dpi in the monochrome mode.
Tray 3 Feed MTR (50)
The paper feed motor in the 3rd feeder is turned on for approx. 1.5 sec. at 1200 dpi.
(Service Mode)

* Caution 1: Before performing this test, install all following units or remove all following units to avoid the toner clogging in the accumulator unit and print cartridge unit.
1. All print cartridges (Black and CMY) 2. Accumulator Unit 3. Waste Toner Cartridge

Caution 2: When performing this test while opening the right cover, lift up the waste toner cartridge to the upper position, or the waste toner will be dispersed.

6.13.4. Paper Detect Sensor TEST

⑩-4 Paper Detect Sensor Test Item Menu

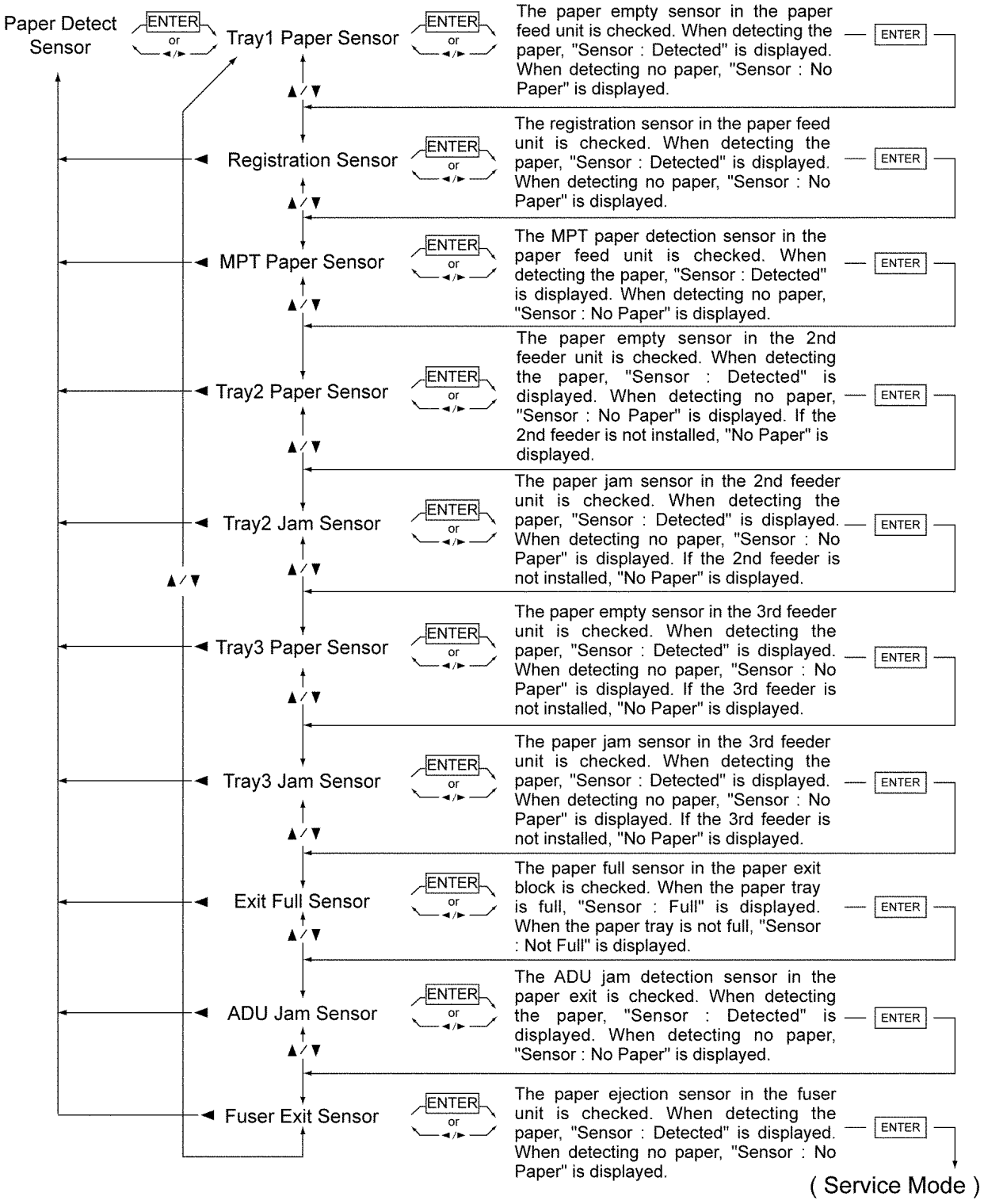
ENTER : Press the Enter button.

▲/▼ : Press the ▲ or ▼ button.

◄ : Press the ◄ button.

◄/► : Press the ◄ or ► button.

Selection 1 Menu


Paper Detect Sensor
ENTER
or ◄/►
Tray1 Paper Sensor
The paper empty sensor in the paper feed unit is checked. When detecting the paper, "Sensor : Detected" is displayed. When detecting no paper, "Sensor : No Paper" is displayed.
Registration Sensor
The registration sensor in the paper feed unit is checked. When detecting the paper, "Sensor : Detected" is displayed. When detecting no paper, "Sensor : No Paper" is displayed.
MPT Paper Sensor
The MPT paper detection sensor in the paper feed unit is checked. When detecting the paper, "Sensor : Detected" is displayed. When detecting no paper, "Sensor : No Paper" is displayed.
Tray2 Paper Sensor
The paper empty sensor in the 2nd feeder unit is checked. When detecting the paper, "Sensor : Detected" is displayed. When detecting no paper, "Sensor : No Paper" is displayed. If the 2nd feeder is not installed, "No Paper" is displayed.
Tray2 Jam Sensor
The paper jam sensor in the 2nd feeder unit is checked. When detecting the paper, "Sensor : Detected" is displayed. When detecting no paper, "Sensor : No Paper" is displayed. If the 2nd feeder is not installed, "No Paper" is displayed.
Tray3 Paper Sensor
The paper empty sensor in the 3rd feeder unit is checked. When detecting the paper, "Sensor : Detected" is displayed. When detecting no paper, "Sensor : No Paper" is displayed. If the 3rd feeder is not installed, "No Paper" is displayed.
Tray3 Jam Sensor
The paper jam sensor in the 3rd feeder unit is checked. When detecting the paper, "Sensor : Detected" is displayed. When detecting no paper, "Sensor : No Paper" is displayed. If the 3rd feeder is not installed, "No Paper" is displayed.
Exit Full Sensor
The paper full sensor in the paper exit block is checked. When the paper tray is full, "Sensor : Full" is displayed. When the paper tray is not full, "Sensor : Not Full" is displayed.
ADU Jam Sensor
The ADU jam detection sensor in the paper exit is checked. When detecting the paper, "Sensor : Detected" is displayed. When detecting no paper, "Sensor : No Paper" is displayed.
Fuser Exit Sensor
The paper ejection sensor in the fuser unit is checked. When detecting the paper, "Sensor : Detected" is displayed. When detecting no paper, "Sensor : No Paper" is displayed.
ENTER
(Service Mode)

6.13.5. Cassette Sensor Test

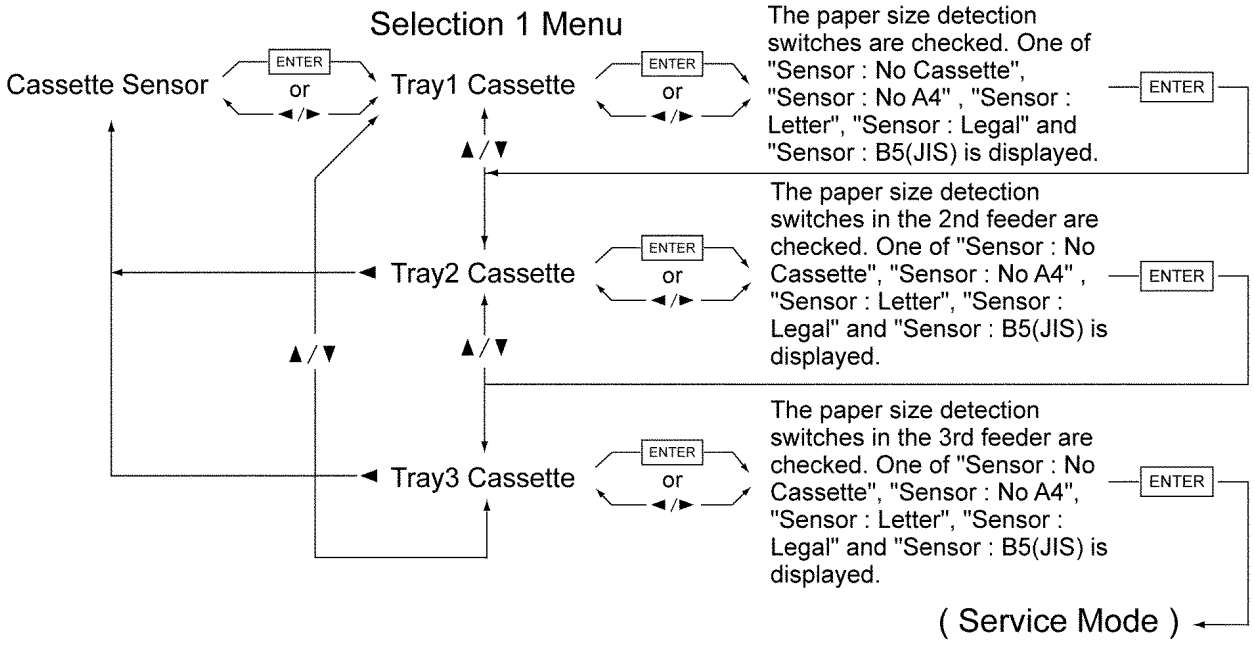
⑩-5 Cassette Sensor Test Item Menu

ENTER : Press the Enter button.

◄ : Press the ◄ button.

▲/▼ : Press the ▲ or ▼ button.

◄/► : Press the ◄ or ► button.


Selection 1 Menu
Cassette Sensor
ENTER
or
◄/►
Tray1 Cassette
ENTER
or
◄/►
The paper size detection switches are checked. One of "Sensor : No Cassette", "Sensor : No A4" , "Sensor : Letter", "Sensor : Legal" and "Sensor : B5(JIS) is displayed.
ENTER
▲/▼
Tray2 Cassette
ENTER
or
◄/►
The paper size detection switches in the 2nd feeder are checked. One of "Sensor : No Cassette", "Sensor : No A4" , "Sensor : Letter", "Sensor : Legal" and "Sensor : B5(JIS) is displayed.
ENTER
▲/▼
▲/▼
Tray3 Cassette
ENTER
or
◄/►
The paper size detection switches in the 3rd feeder are checked. One of "Sensor : No Cassette", "Sensor : No A4", "Sensor : Letter", "Sensor : Legal" and "Sensor : B5(JIS) is displayed.
ENTER
(Service Mode)

6.13.6. Temp & Humidity Sensor

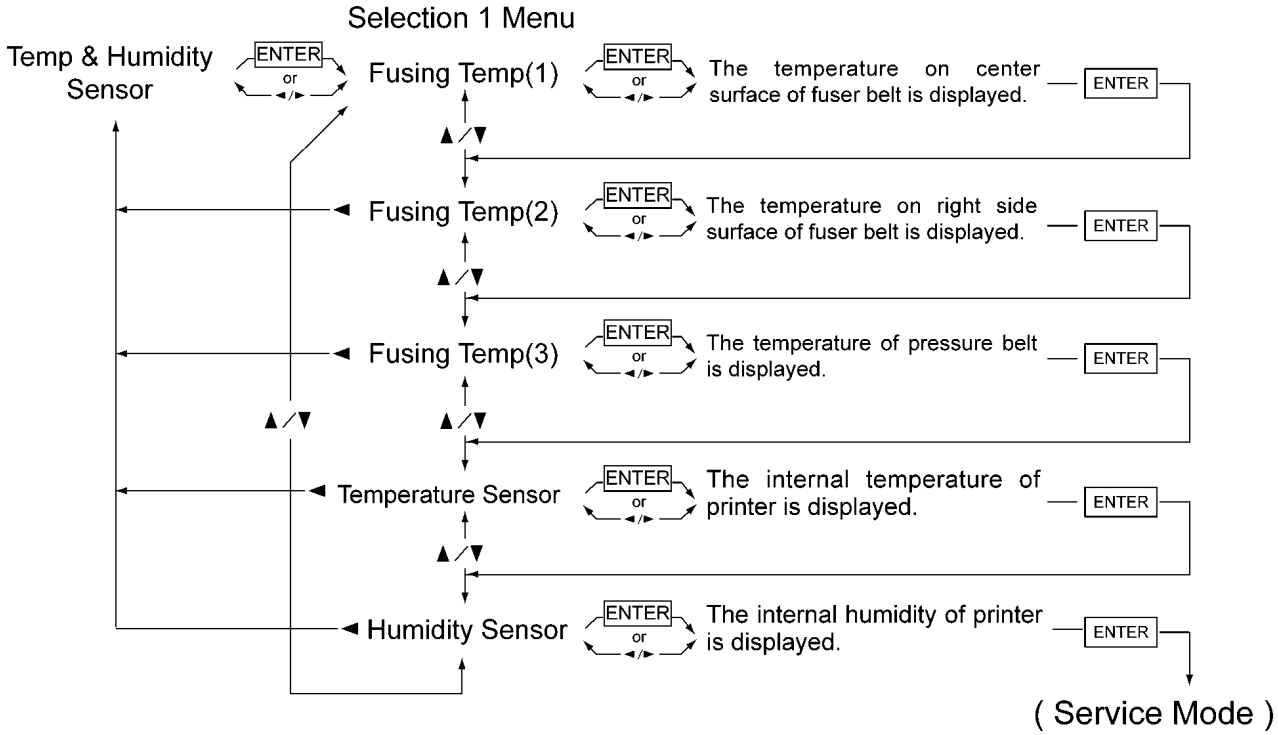
⑩-6 Temp & Humidity Sensor Item Menu

ENTER : Press the Enter button.

◄ : Press the ◄ button.

▲/▼ : Press the ▲ or ▼ button.

◄/► : Press the ◄ or ► button.


Selection 1 Menu
Temp & Humidity Sensor
ENTER
or ◄/►
Fusing Temp(1)
The temperature on center surface of fuser belt is displayed.
Fusing Temp(2)
The temperature on right side surface of fuser belt is displayed.
Fusing Temp(3)
The temperature of pressure belt is displayed.
Temperature Sensor
The internal temperature of printer is displayed.
Humidity Sensor
The internal humidity of printer is displayed.
▲/▼
(Service Mode)

6.13.7. WTC & Toner Sensor

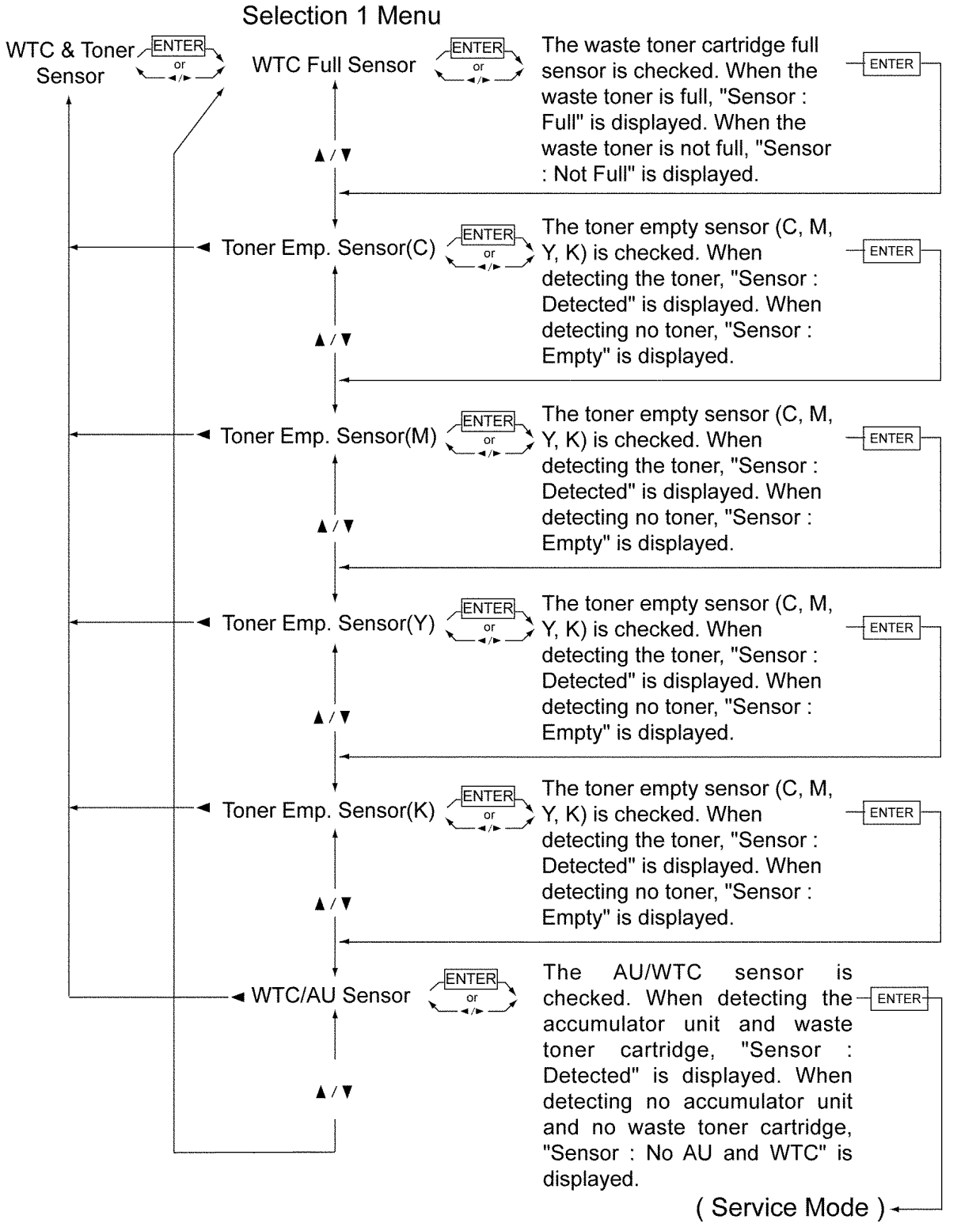
⑩-7 WTC & Toner Sensor Item Menu

ENTER : Press the Enter ○ button.

◄ : Press the ◄ button.

▲/▼ : Press the ▲ or ▼ button.

◄/► : Press the ◄ or ► button.


Selection 1 Menu
WTC & Toner Sensor
ENTER
or ◄/►
WTC Full Sensor
The waste toner cartridge full sensor is checked. When the waste toner is full, "Sensor : Full" is displayed. When the waste toner is not full, "Sensor : Not Full" is displayed.
▲/▼
Toner Emp. Sensor(C)
The toner empty sensor (C, M, Y, K) is checked. When detecting the toner, "Sensor : Detected" is displayed. When detecting no toner, "Sensor : Empty" is displayed.
Toner Emp. Sensor(M)
The toner empty sensor (C, M, Y, K) is checked. When detecting the toner, "Sensor : Detected" is displayed. When detecting no toner, "Sensor : Empty" is displayed.
Toner Emp. Sensor(Y)
The toner empty sensor (C, M, Y, K) is checked. When detecting the toner, "Sensor : Detected" is displayed. When detecting no toner, "Sensor : Empty" is displayed.
Toner Emp. Sensor(K)
The toner empty sensor (C, M, Y, K) is checked. When detecting the toner, "Sensor : Detected" is displayed. When detecting no toner, "Sensor : Empty" is displayed.
WTC/AU Sensor
The AU/WTC sensor is checked. When detecting the accumulator unit and waste toner cartridge, "Sensor : Detected" is displayed. When detecting no accumulator unit and no waste toner cartridge, "Sensor : No AU and WTC" is displayed.
(Service Mode)

6.13.8. Door Sensor

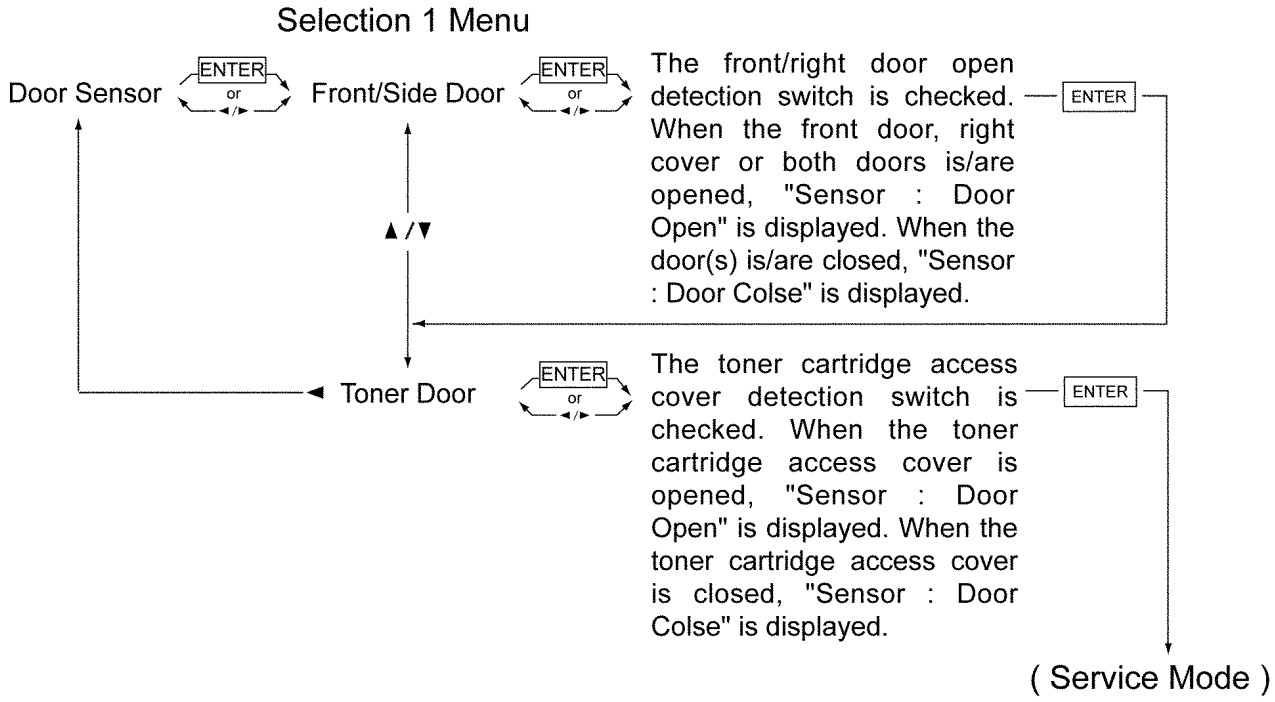
⑩-8 Door Sensor Item Menu

ENTER : Press the Enter button.

▲/▼ : Press the ▲ or ▼ button.

◄ : Press the ◄ button.

◄/► : Press the ◄ or ► button.


Selection 1 Menu
Door Sensor
ENTER
or
◄/►
Front/Side Door
ENTER
or
◄/►
The front/right door open detection switch is checked. When the front door, right cover or both doors is/are opened, "Sensor : Door Open" is displayed. When the door(s) is/are closed, "Sensor : Door Colse" is displayed.
ENTER
▲/▼
Toner Door
ENTER
or
◄/►
The toner cartridge access cover detection switch is checked. When the toner cartridge access cover is opened, "Sensor : Door Open" is displayed. When the toner cartridge access cover is closed, "Sensor : Door Colse" is displayed.
ENTER
(Service Mode)

6.13.9. Other Sensor

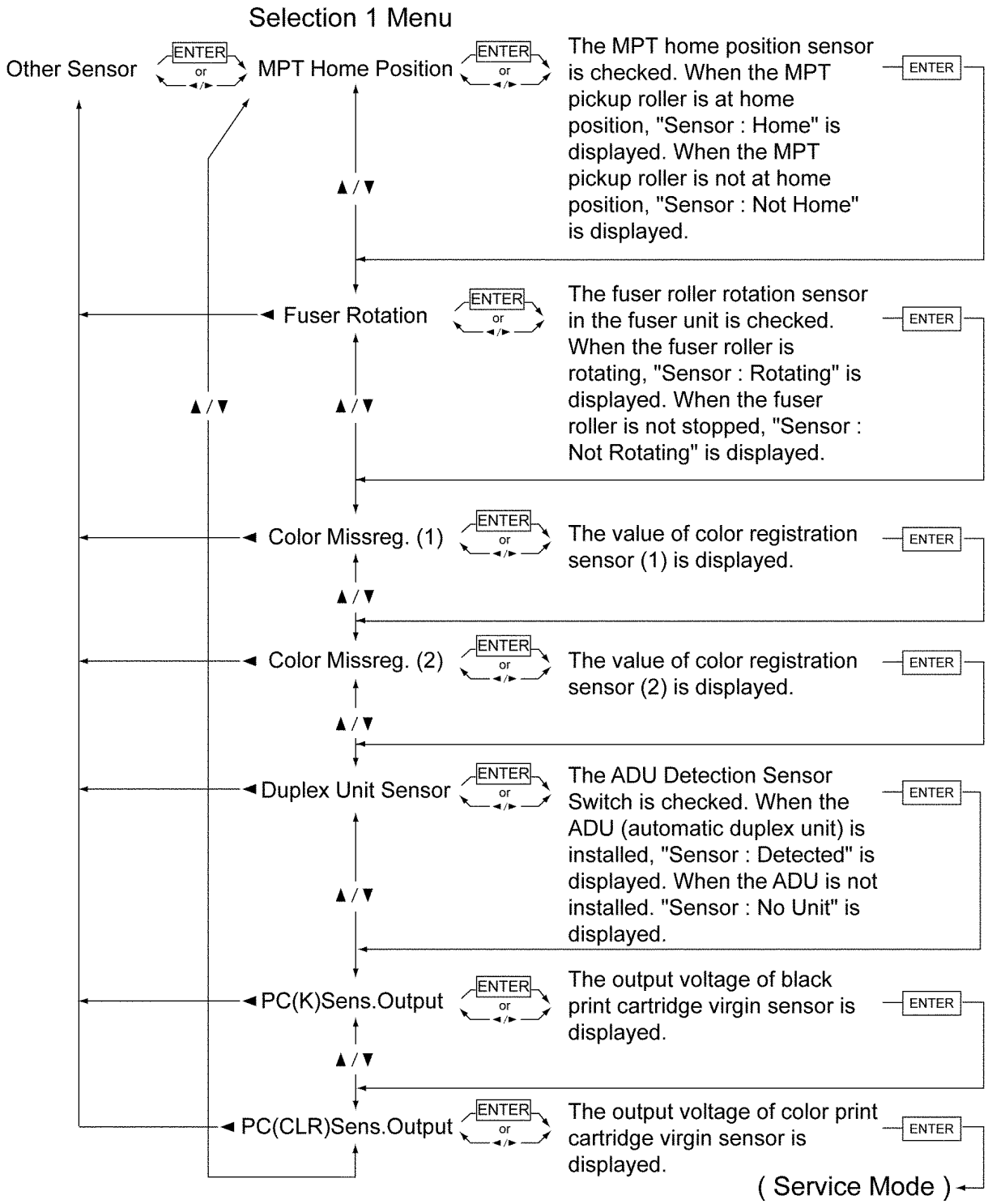
⑩-9 Other Sensor Item Menu

ENTER : Press the Enter ○ button.

◄ : Press the ◄ button.

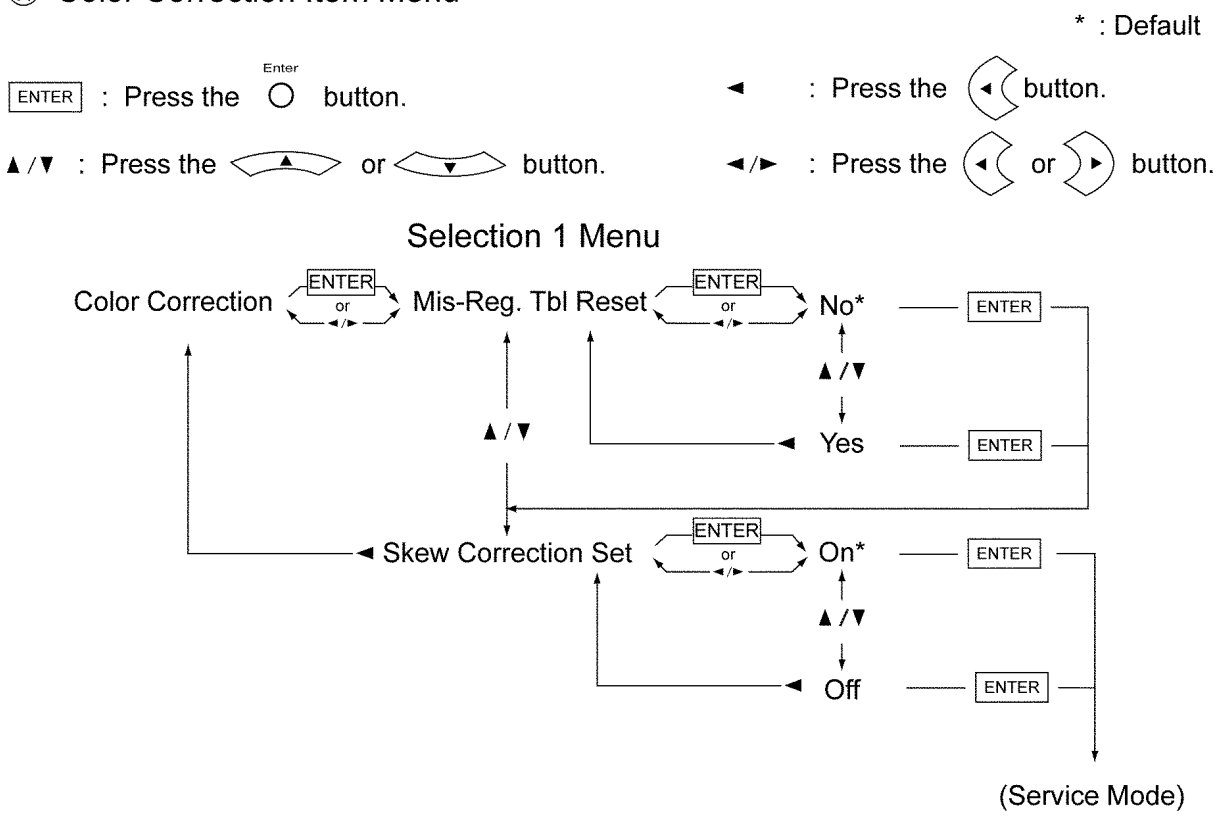
▲/▼ : Press the ▲ or ▼ button.

◄/► : Press the ◄ or ► button.


Selection 1 Menu
Other Sensor
ENTER or ◄/►
MPT Home Position
The MPT home position sensor is checked. When the MPT pickup roller is at home position, "Sensor : Home" is displayed. When the MPT pickup roller is not at home position, "Sensor : Not Home" is displayed.
ENTER
▲/▼
◄ Fuser Rotation
The fuser roller rotation sensor in the fuser unit is checked. When the fuser roller is rotating, "Sensor : Rotating" is displayed. When the fuser roller is not stopped, "Sensor : Not Rotating" is displayed.
◄ Color Missreg. (1)
The value of color registration sensor (1) is displayed.
◄ Color Missreg. (2)
The value of color registration sensor (2) is displayed.
◄ Duplex Unit Sensor
The ADU Detection Sensor Switch is checked. When the ADU (automatic duplex unit) is installed, "Sensor : Detected" is displayed. When the ADU is not installed. "Sensor : No Unit" is displayed.
◄ PC(K)Sens.Output
The output voltage of black print cartridge virgin sensor is displayed.
◄ PC(CLR)Sens.Output
The output voltage of color print cartridge virgin sensor is displayed.
(Service Mode)

6.14. Color Correction Item Menu

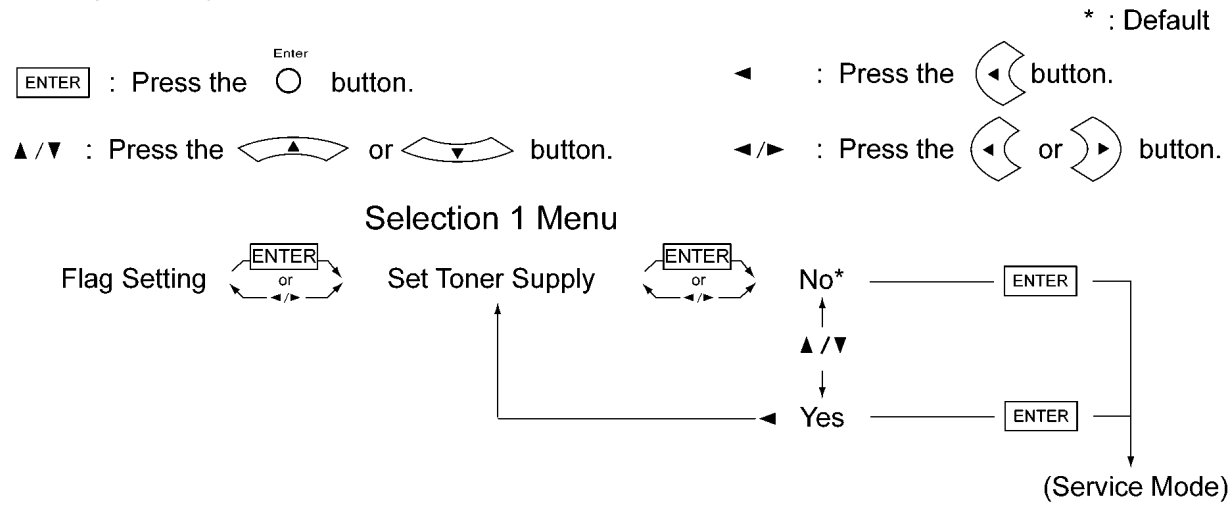
⑪ Color Correction Item Menu



6.15. Flag Setting Item Menu

If “Yes” is selected on this menu, the printer will be filled with toner about 5 minutes after turning on the printer the next time.

⑫ Flag Setting Item Menu



6.16. Printing Network Configuration Report

The following is an example of what is printed when performing the Printing Network Configuration Report (refer to the section 6.1.2 “How to print the Network Configuration Report”.).

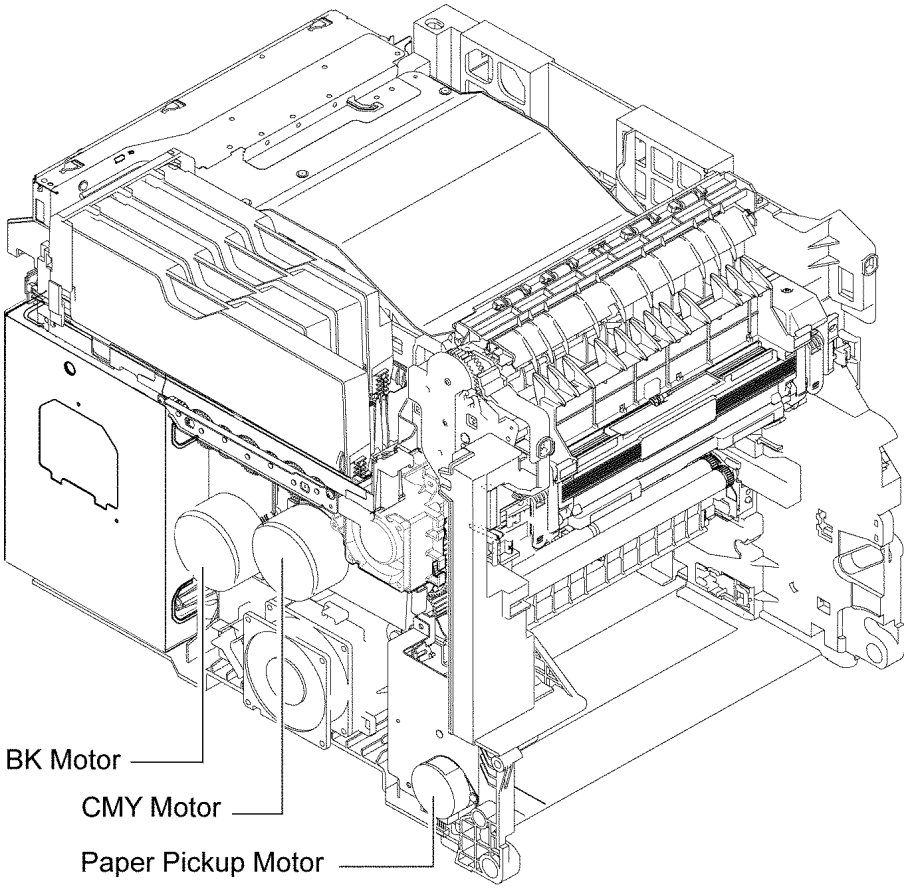
```
DP-CL18 Network Version 1.0.0 05/01/13
(C) Panasonic Communications Co., Ltd. 2005
(C) silex technology, Inc. 1998-2005

*** Configuration report ***
<< Configure General >>
    root Password                   :""
    Use HP JetAdmin                 :NO
<< Configure TCP/IP >>
    Use TCP/IP Protocol             :ENABLE
    Use DHCP/BOOTP                  :ENABLE
    Use RARP                        :DISABLE
    IP Address                      :0.0.0.0
    Subnet Mask                     :0.0.0.0
    Default Gateway                 :0.0.0.0
<< Configure TCP/IP - DNS/WINS Server >>
    Preferred DNS Server            :0.0.0.0
    Alternate DNS Server            :0.0.0.0
    Preferred WINS Server           :0.0.0.0
    Alternate WINS Server           :0.0.0.0
    Scope ID                        :""
<< Configure TCP/IP - IP Filtering >>
    Use IP Filtering                :DISABLE
    Mode                            :ACCEPT
    Filter #1 Start Address         :0.0.0.0
    Filter #1 End Address           :0.0.0.0
    Filter #2 Start Address         :0.0.0.0
    Filter #2 End Address           :0.0.0.0
    Filter #3 Start Address         :0.0.0.0
    Filter #3 End Address           :0.0.0.0
    Filter #4 Start Address         :0.0.0.0
    Filter #4 End Address           :0.0.0.0
<< Configure TCP/IP - Advanced >>
    Use IPv6 Protocol               :ENABLE
    Use FTP/LPD Banner              :NO
<< Configure NetWare >>
    Use NetWare Protocol            :ENABLE
    Frame Type                      :802.2
    Printer Name                    :"DPCL137E55-Printer"
    Operation Mode                  :PSERVER
<< Configure NetWare - PSERVER Mode >>
    Print Server Name               :"DPCL137E55"
    Bindery                         :ENABLE
<< Configure NetWare - PSERVER Mode - PSERVER >>
    Password                        :""
    Job Polling Interval (Second)   :4
<< Configure NetWare - PSERVER Mode - File Server >>
    File Server Name 1              :""
    File Server Name 2              :""
    File Server Name 3              :""
    File Server Name 4              :""
    File Server Name 5              :""
    File Server Name 6              :""
    File Server Name 7              :""
    File Server Name 8              :""
```

7 Mechanical Function

7.1. Drive Mechanism General Description

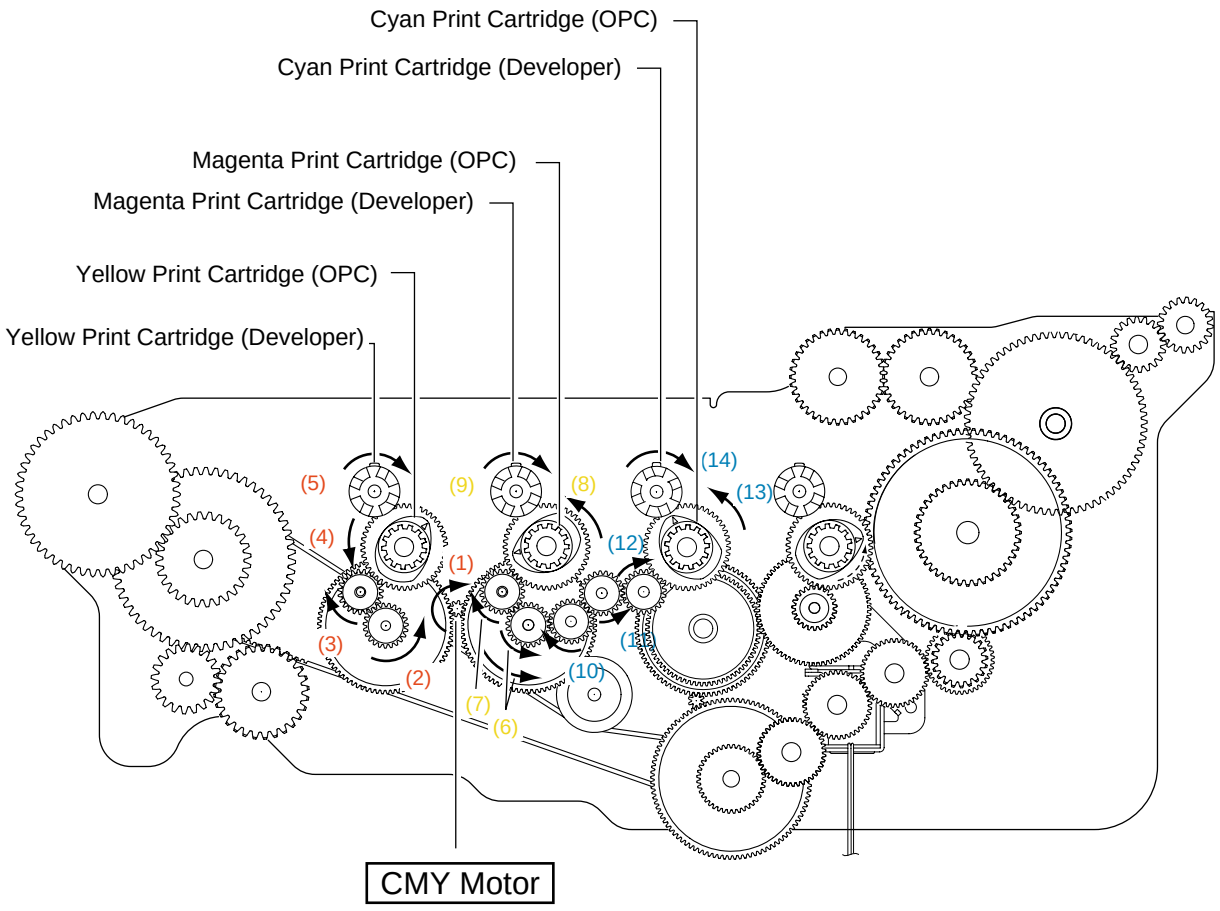
Three motors (CMY motor, BK motor, paper pickup motor) supply drive to each mechanical block within the engine. The CMY motor (DC servomotor) supplies drive to the color print cartridge (CMY PC). The BK motor (DC servomotor) supplies drive to the black print cartridge (Black PC), four color toner cartridges, accumulator unit (Acc Unit or AU), accumulator tension unit (ATU), paper feed unit and fuser unit.

The paper pickup motor (stepping motor) supplies drive to the multi-purpose paper feeder and option Auto Duplex Unit (ADU).



7.1.1. CMY Motor Rotation Travel

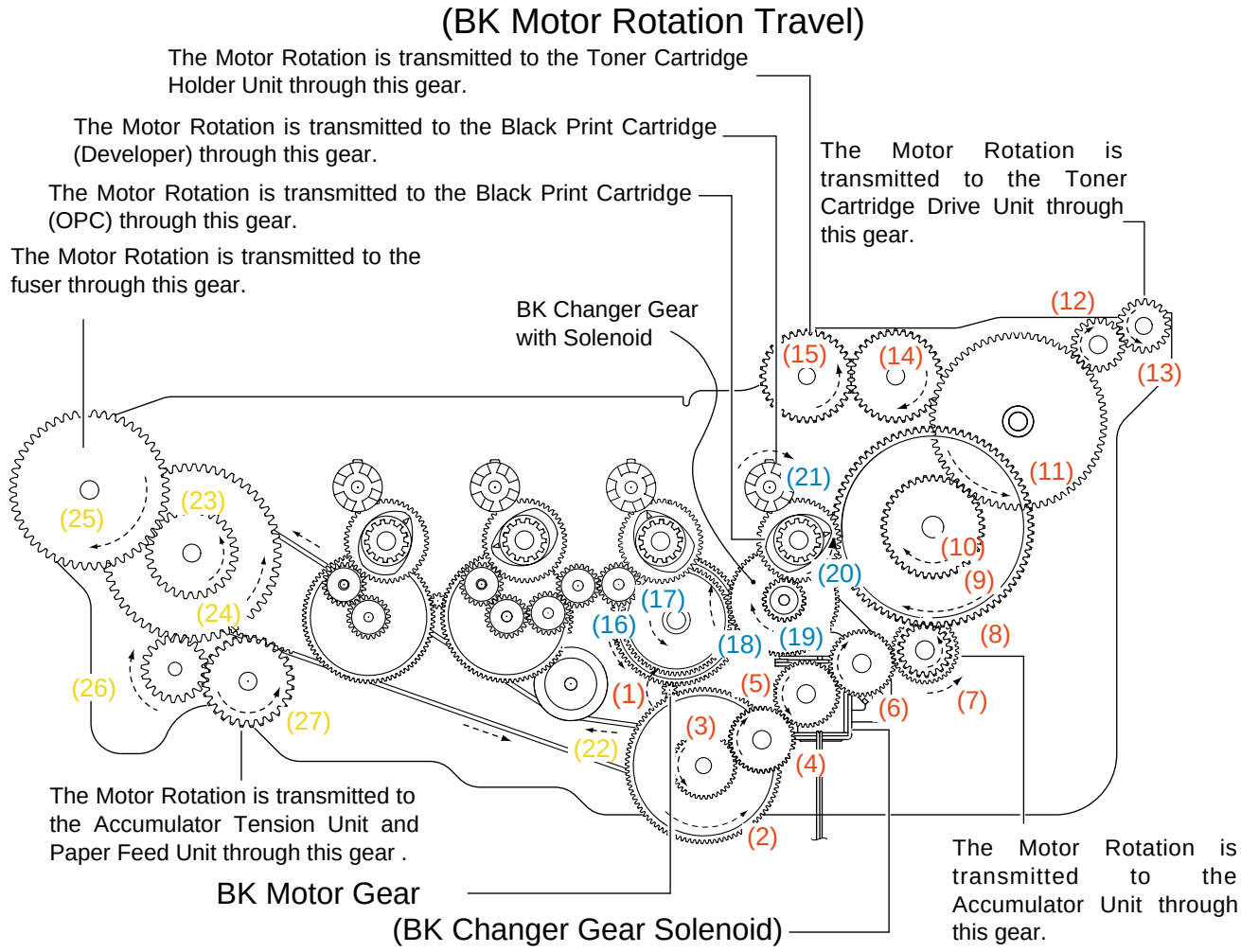
(CMY Motor Rotation Travel)



The CMY Motor Rotation is transmitted in the following number order :

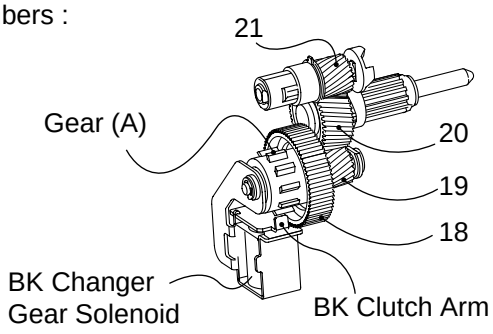
(1) → (2) → (3) → (4) → (5) → To Yellow Print Cartridge (Developer)
(4) → To Yellow Print Cartridge (OPC)
(1) → (6) → (7) → (8) → (9) → To Magenta Print Cartridge (Developer)
(8) → To Magenta Print Cartridge (OPC)
(6) → (10) → (11) → (12) → (13) → (14) → To Cyan Print Cartridge (Developer)
(13) → To Cyan Print Cartridge (OPC)

7.1.2. BK Motor Rotation Travel



The BK Motor Rotation is transmitted in order the following numbers :

The rotation transmission to the black print cartridge is controlled by the BK Changer Gear Solenoid. When the BK Changer Gear Solenoid is turned on, the BK clutch arm is unlatched from the Gear (A). As a result, the BK motor rotation is not transmitted from (18) to (19) ~ (21) and black print cartridge.



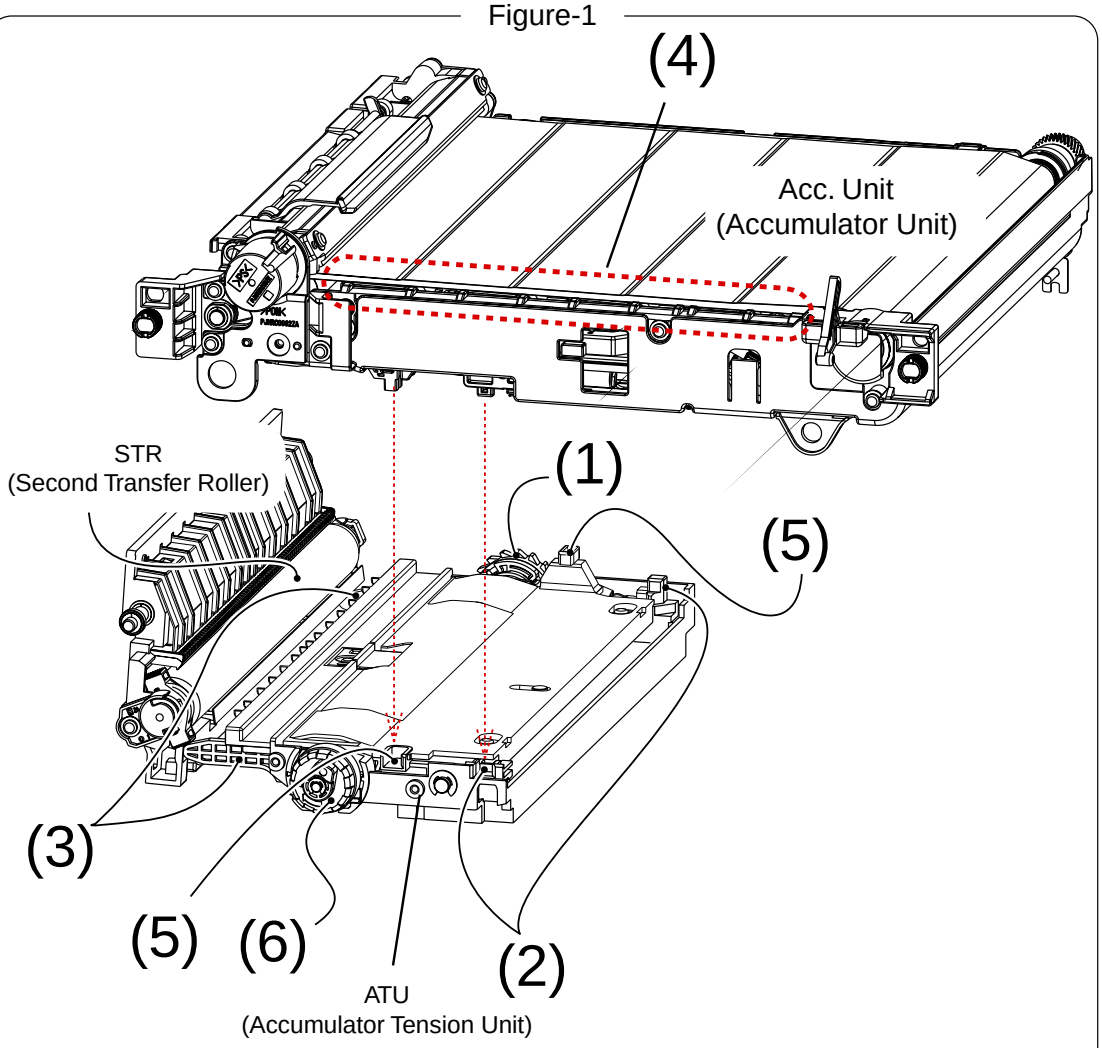
(1) → (16) → (17) → (18) → (19) → (20) → (21) → To Black Print Cartridge (Developer)
(20) → To Black Print Cartridge (OPC)
(1) → (3) → (4) → (5) → (6) → (7) → To Accumulator Unit
(2) → (8) → (9) → (10) → (11) → (12) → (13) → To Toner Cartridge Drive Unit
(11) → (14) → (15) → To Toner Cartridge Holder Unit
(2) → (22) → (23) → (24) → (25) → To Fuser Unit
(24) → (26) → (27) → To Accumulator Tension Unit and Paper Feed Unit

7.2. Accumulator Tension Unit (ATU) Drive Mechanism

The accumulator tension unit is for operating the function of accumulator unit and depositing waste toner in the waste toner cartridge.

The accumulator unit consists of “ATU Drive Clutch”, “Taking up accumulator belt slack”, “Contacting STR Roller to Accumulator Belt”, “Selecting of FTR Roller”, “lifting up FTR Roller” and “Waste Toner Cartridge Stirring” mechanisms.

Figure-1

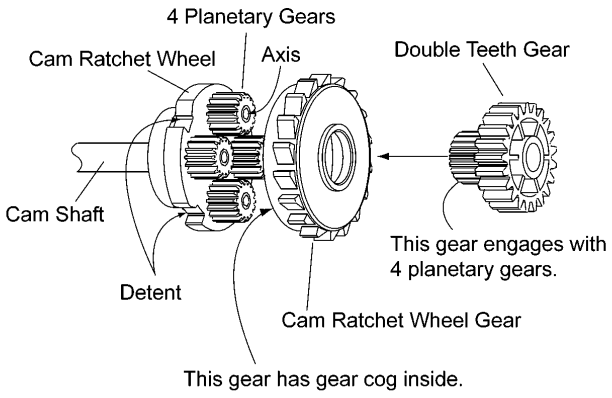


(1) ATU Drive Clutch
(2) Taking up Accumulator Belt Slack
(3) Contacting STR Roller to Accumulator Belt
(4) Lifting up FTR Roller
(5) Selecting of FTR Roller
(6) Waste Toner Cartridge Stirring

7.2.1. ATU Drive Clutch

The ATU drive clutch is used to turn on and off the rotation from the BK motor to the cam shaft. See the following figure-1. The ATU drive clutch consists of the cam ratchet, cam ratchet wheel, cam ratchet wheel gear, 4 planetary gears and accumulator cam switching solenoid. The rotation from the BK motor is transmitted to the cam ratchet wheel or cam ratchet wheel gear through the double teeth gear and 4 planetary gears.

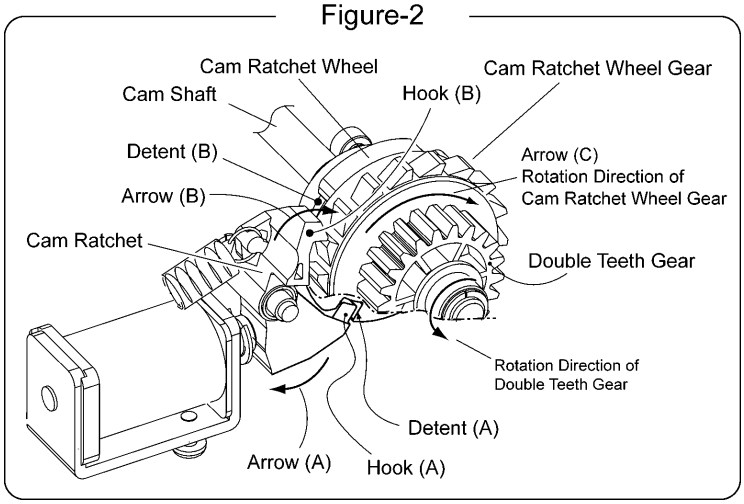
Figure-1



In standby mode, the cam ratchet wheel cannot rotate because hook (A) of the cam ratchet engages with the detent of the cam ratchet wheel, and the cam ratchet wheel gear is free to rotate because the hook (B) is not engaged with the teeth of the cam ratchet wheel gear. With this mechanism, the rotation from the BK motor is transmitted to the cam ratchet wheel gear and rotates in the arrow (C) direction.

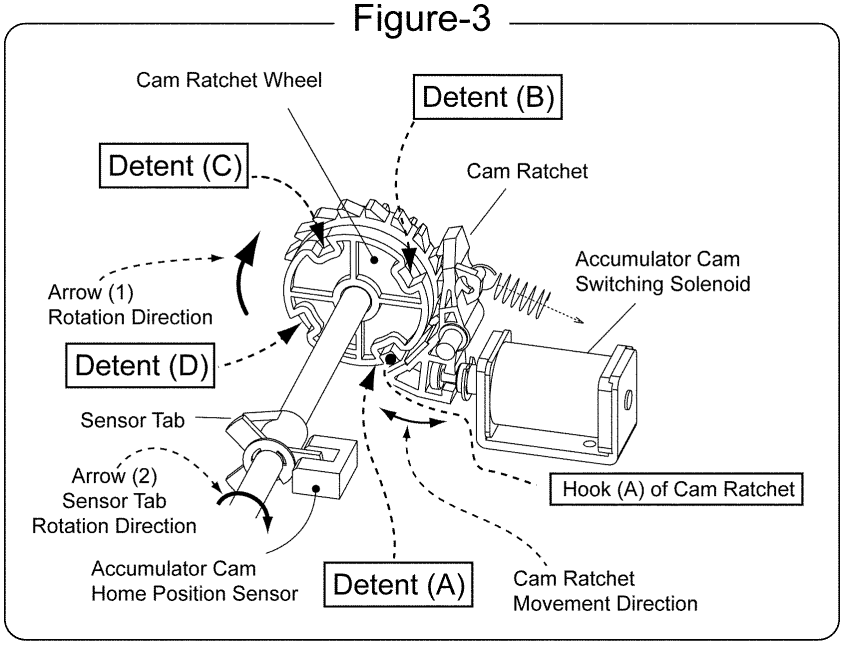
When the accumulator switching solenoid is turned on for a predetermined time (150 ~ 200 msec) to perform the printing process, the hook (B) moves in the arrow (B) direction and is engaged with the teeth of cam ratchet wheel gear. The rotation of the cam ratchet wheel gear is stopped, then the hook (A) moves in the arrow (A) direction and is released from the detent of the cam ratchet wheel. As a result, the cam ratchet wheel is free and the cam ratchet wheel is rotated in the arrow (D) by the rotation transmitted from the BK motor through the double teeth gear and 4 planetary gears. After this, the hook (A) engages with the detent (B) and the cam ratchet wheel is locked by hook (A). The rotation from the BK motor is transmitted to the cam ratchet wheel gear and is not transmitted to the cam shaft.

Figure-2



After hook (A) engages detent (C) and detent (D) the same way, hook (A) engages detent (A) again.

Figure-3



There are 4 statuses of the accumulator tension unit for controlling the printing process. These 4 statuses are set by the 4 detents of the cam ratchet wheel.

- Accumulator Belt Cleaning Position:

  When the hook (A) engages with the detent (B), the slack in the accumulator belt is taken up by the “Accumulator belt slack” mechanism. The cleaning of the accumulator belt is done.

- Toner Transfer Position:

  When the hook (A) engages with the detent (C), the FTR roller(s) is (are) raised and come in contact with the accumulator belt by the “Lift FTR Roller” mechanism for transferring the toner from the OPC drum to the accumulator belt, and the STR roller is engaged with the accumulator belt by the “STR Roller to Accumulator Belt” mechanism for transferring the toner to the paper.

- FTR Roller Release Position:

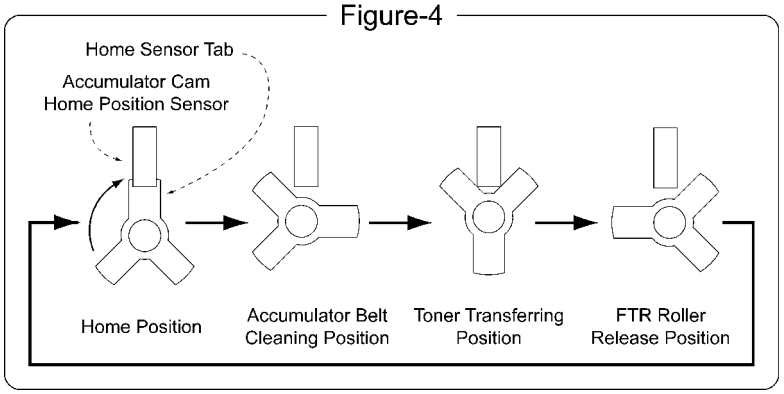
  When the hook (A) engages with the detent (D), the FTR bias roller(s) is (are) released from the accumulator belt by the “Lift FTR Roller” mechanism.

- Home Position:

  When the hook (A) engages with the detent (A), the tension is released in the accumulator belt and the STR roller is removed from the accumulator belt.

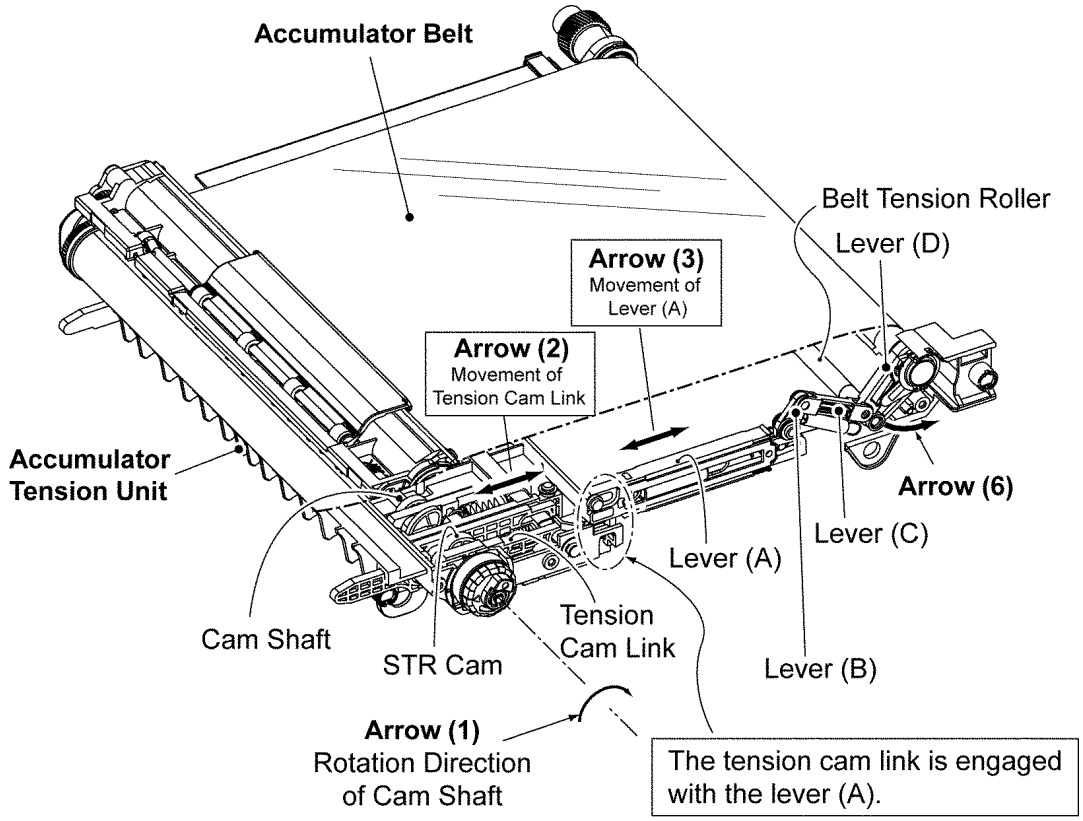
The accumulator cam home position sensor and sensor tab are for detecting whether the status of the accumulator tension unit is shifted from one position to next within predetermined time or not. if the status of the accumulator tension unit is not shifted to the next position within the predetermined time, Error Message “Printer Error 24” is displayed on the LCD display. The following chart figure-4 indicates the relation between the sensor tab and accumulator cam home position sensor at each position.

Figure-4

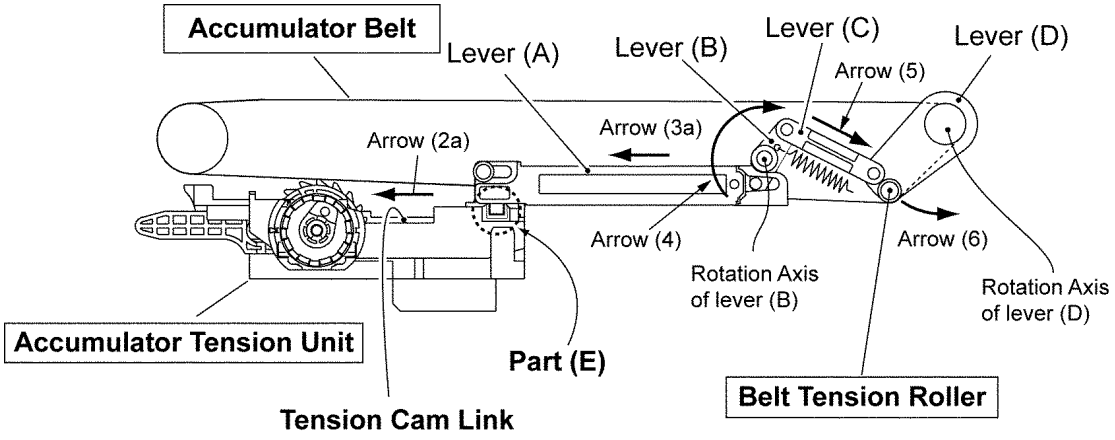


7.2.2. Taking up Accumulator Belt Slack

Taking up accumulator belt slack is performed by the tension cam link, cam shaft, STR cam in the accumulator tension unit and 4 levers (A) - (D), belt tension roller in the accumulator unit. The following indicates the location of these parts (tension cam link, cam shaft, etc.).

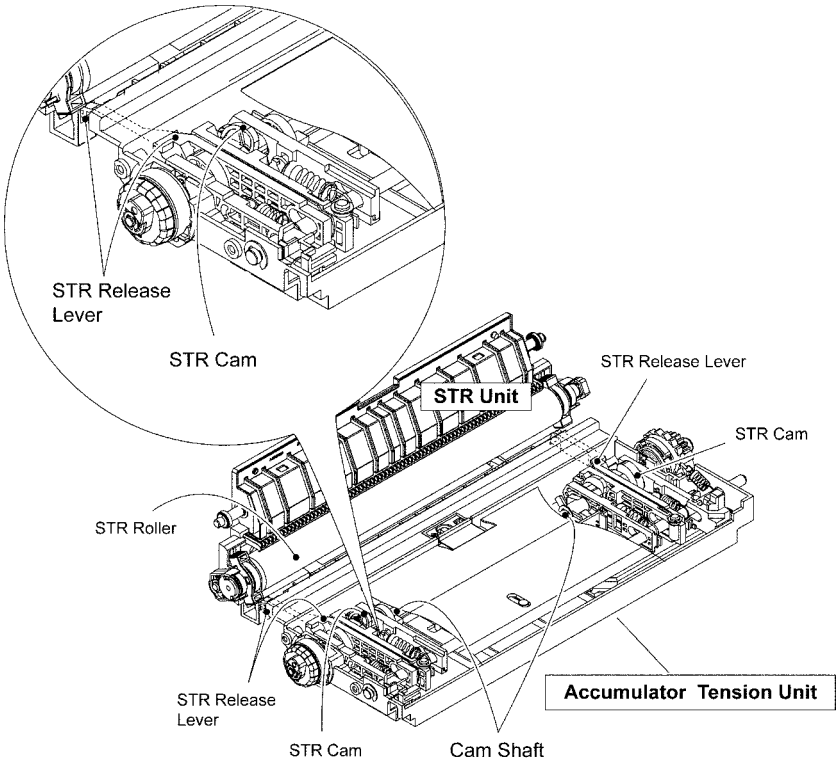


The tension cam link in the accumulator tension unit is engaged with the lever (A) in the accumulator unit [Part (E)]. When the cam shaft start to rotate, the tension cam link moves to the arrow (2a) direction by the movement of STR cam linked with the cam shaft. This movement is transferred to the lever (D) through the levers (B) - (C). The belt tension roller linked with the lever (D) moves to the arrow (6) direction. This movement takes up the slack in the accumulator belt.

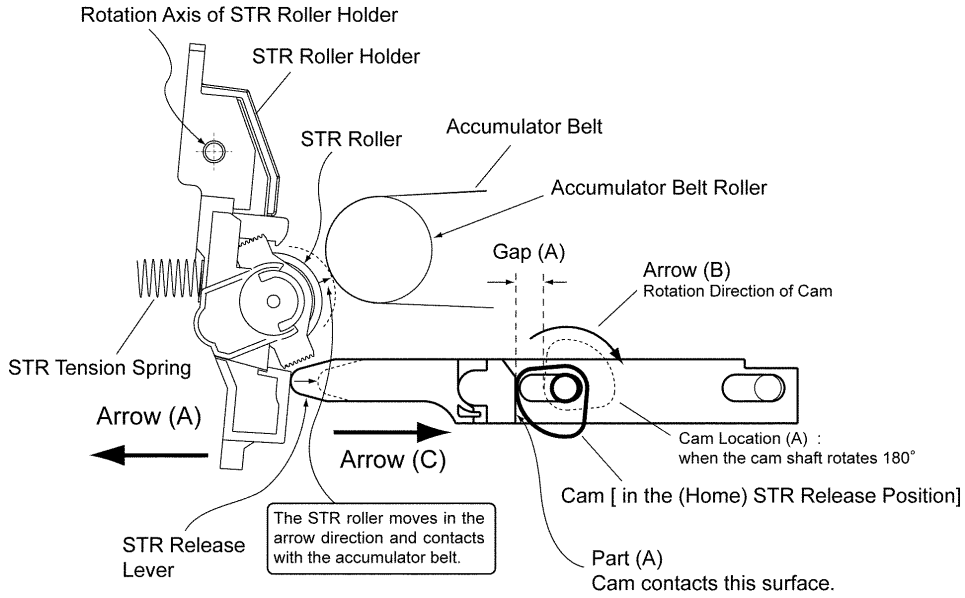


7.2.3. Contact STR Roller to Accumulator Belt

The STR roller is in contact with the accumulator belt or released from the accumulator belt by the STR release lever linked with the STR cam in the accumulator tension unit. The following indicates the STR cam, cam shaft and STR release lever in the accumulator tension unit.

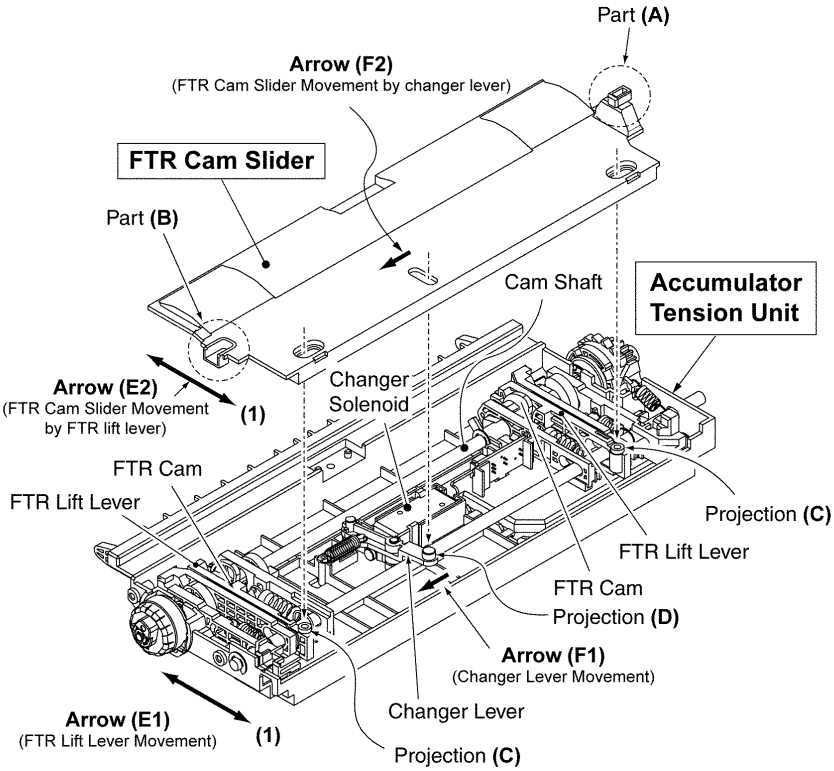


When the accumulator tension unit is in the Home Position, the STR roller is released from the accumulator belt because the top end of STR release lever pushes the STR roller holder in the arrow (A) direction. When the cam shaft rotates, the cam rotates in the arrow (B) direction. When the cam shaft rotates 180° (the status of accumulator tension unit is in the “Toner Transfer Position”), the STR tension spring moves the STR roller supported by the STR roller holder in the arrow (C) direction, the gap (A) decreases between the part (A) and surface of cam. As a result, the STR roller moves in contact with the accumulator belt. This contact is held until the cam shaft (cam) rotates 270° (The FTR Roller Release Position). When the cam shaft rotates 90° (the status of accumulator tension unit returns to the Home Position), the cam moves the STR release lever in the arrow (A) direction and releases the STR roller from the accumulator belt.


Rotation Axis of STR Roller Holder
STR Roller Holder
STR Roller
Accumulator Belt
Accumulator Belt Roller
Gap (A)
Arrow (B)
Rotation Direction of Cam
STR Tension Spring
Arrow (A)
Arrow (C)
Cam Location (A) :
when the cam shaft rotates 180°
Cam [in the (Home) STR Release Position]
The STR roller moves in the arrow direction and contacts with the accumulator belt.
STR Release Lever
Part (A)
Cam contacts this surface.

7.2.4. Lifting up FTR Roller

The FTR roller(s) is (are) contacted to the accumulator belt or released from the accumulator belt by the “FTR Roller Lifting Up” mechanism consists of the FTR lift levers, FTR cams, cam shaft, etc.,. The following indicates the FTR lift levers, FTR cams, cam shaft and FTR cam slider in the accumulator tension unit.

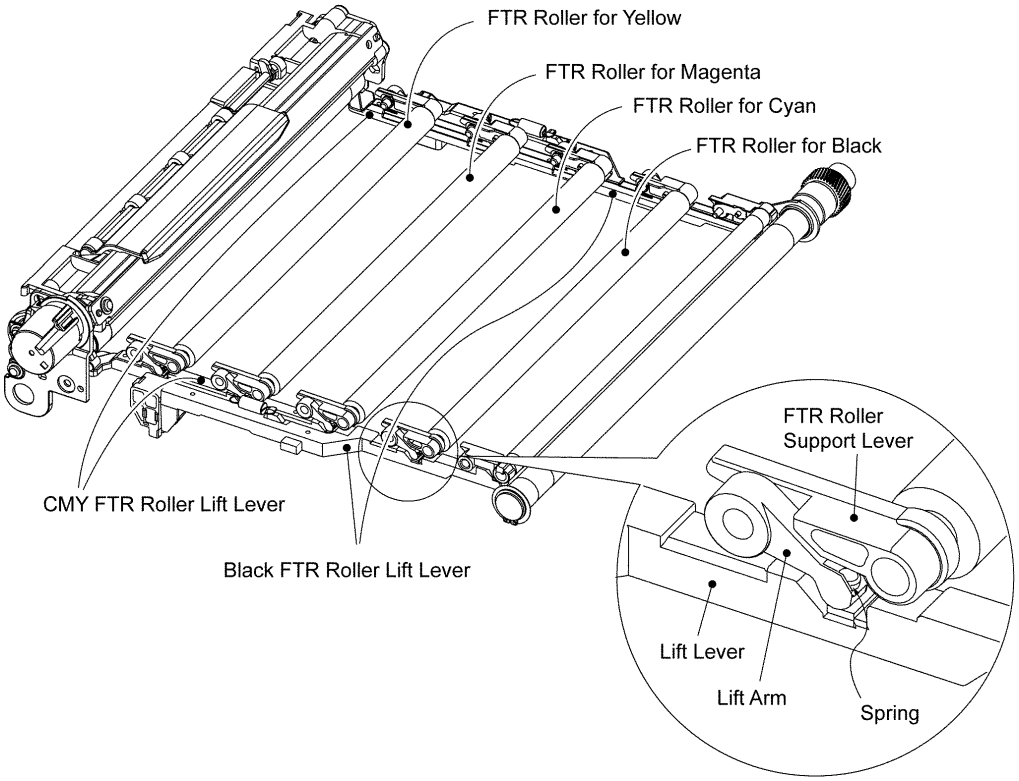


The parts (A) and (B) on the FTR Cam Slider have been engaged with the "FTR Roller Lifting Up" mechanism in the accumulator unit. The FTR roller (s) in the accumulator unit is (are) contacted (released) to (from) the accumulator belt by the movement of the FTR cam slider.

The FTR cam slider is engaged with the projections (C)-(D) in the accumulator tension unit. The projection (C) on the FTR lift lever moves to the arrow (E1) direction by the FTR cam rotation. This projection (C) movement moves the FTR cam slider to the arrow (E2) direction. When the FTR cam slider moves to the (1) direction of arrow (E2), the FTR roller in the accumulator unit contacts with the accumulator belt. Regarding the detail information, refer to the next section “FTR Roller Lift Mechanism”. This model has 4 FTR rollers (cyan, magenta, yellow and black) The changer solenoid, changer lever and FTR cam slider are used for selecting FTR rollers. Normally (when the changer solenoid is turned off), the FTR roller for black is selected. When the changer solenoid is turned on, the changer lever moves to the arrow (F1) direction. As a result, the FTR cam slider moves to the arrow (F2) direction. All FTR rollers (cyan, magenta, yellow and black) are selected, and contacted with the accumulator belt when the FTR cam slider moves to the (1) direction of arrow (E2).

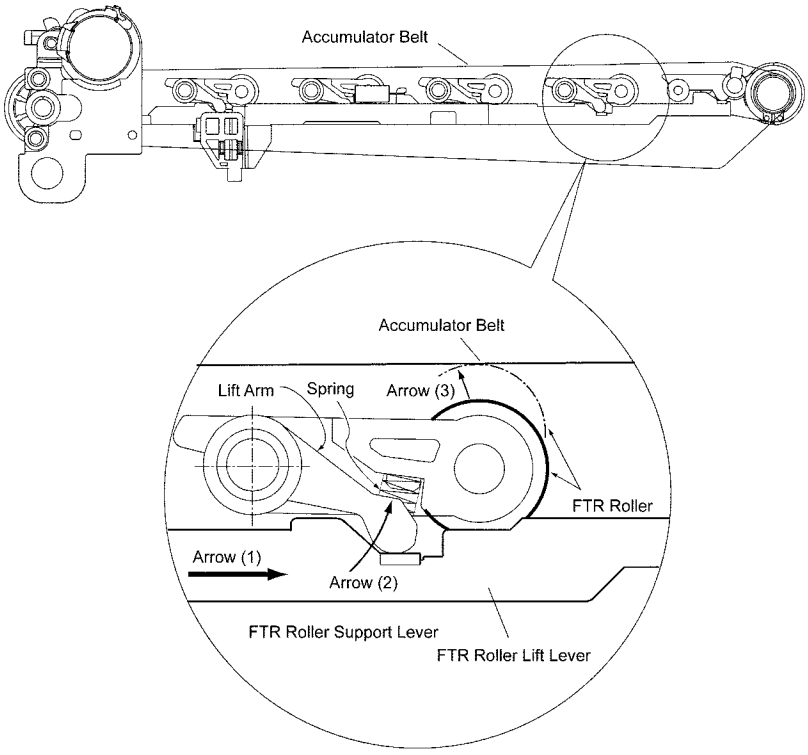
7.2.4.1. FTR Roller Lift Mechanism

The “FTR roller lift” is performed by the FTR cam slider in the accumulator tension unit, FTR roller lift lever, lift arm, spring and FTR roller support lever. The following indicates the FTR roller lift lever, lift arm, spring, etc., in the accumulator unit.



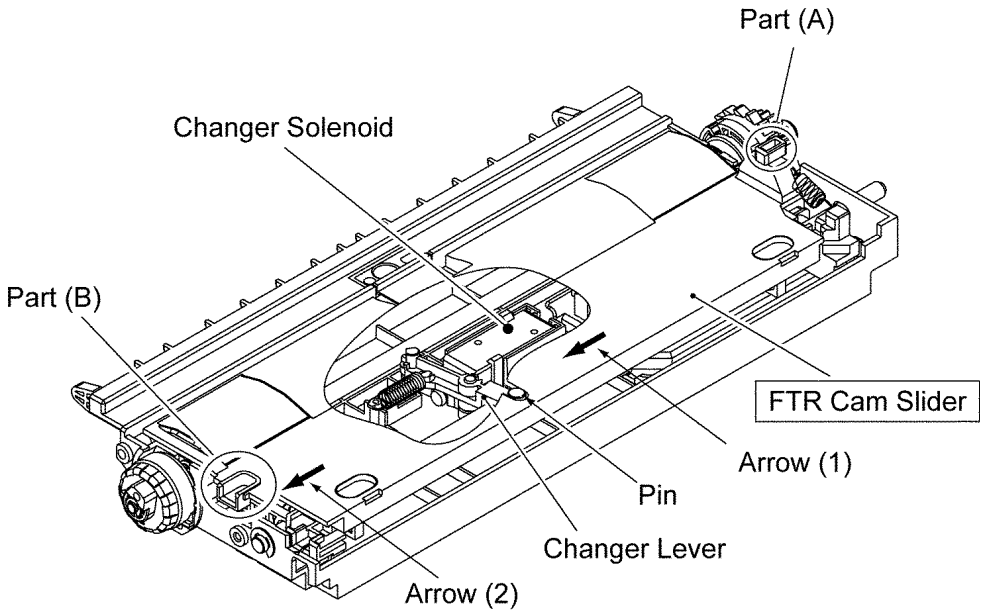
<FTR Roller Lift Mechanism>

The FTR cam slider in the accumulator tension unit moves the FTR roller lift lever to the arrow (1) direction. This movement turns the lift arm to the arrow (2) direction. The lift arm lifts up the FTR roller through a spring and the FTR roller contacts to the accumulator belt.



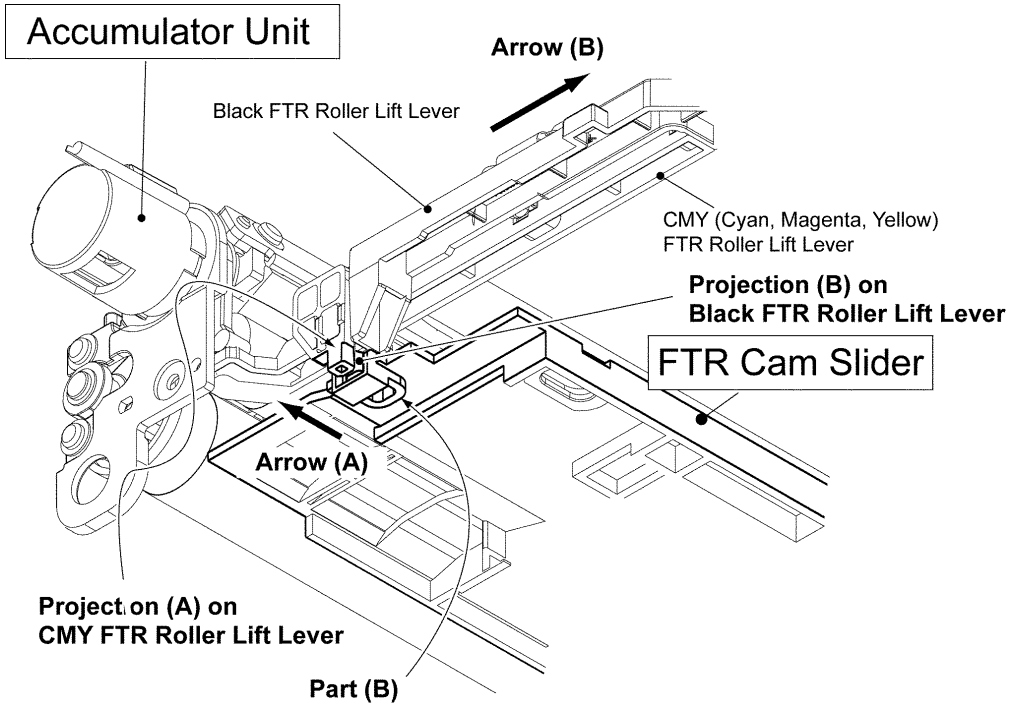
7.2.5. Selecting of FTR Roller

There are four FTR rollers, three colors (yellow, magenta, cyan) and one for black. The changer solenoid is for selecting these FTR rollers. When turning on the changer solenoid, the changer lever moves in the arrow (1) direction. The pin on the changer lever moves the FTR cam slider in the same direction [arrow (2)]. This movement moves the FTR roller lift levers (see previous section “FTR Roller Lift Mechanism”) in the accumulator.



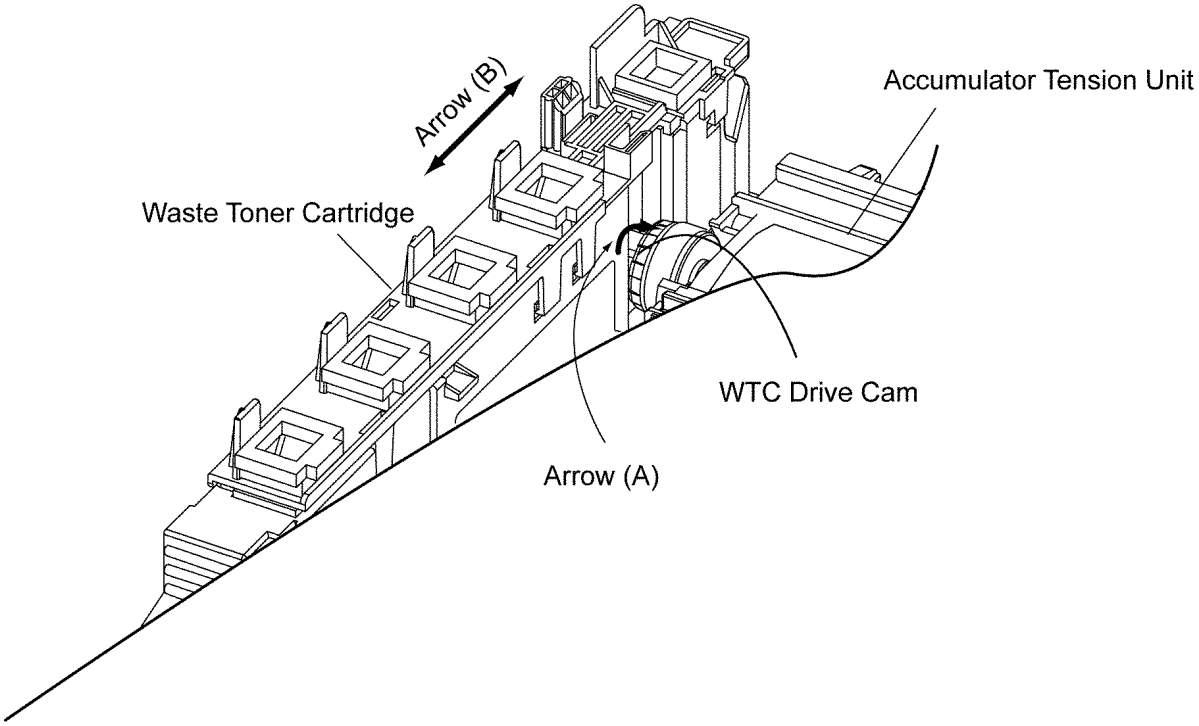
When monochrome printing, the part (B) is engaged with the projection (B) on the black FTR roller lift lever. The black FTR roller lift lever only moves in the Arrow (B) direction and black FTR rollers are contacted with the accumulator belt.

When color printing, the changer solenoid is turned on, moving the FTR cam slider in the arrow (A) direction. The projection (A) is engaged with the part (B). When the FTR cam slider moves to the Arrow (B) direction, the CMY and black FTR roller lift levers move to the Arrow (B) at the same time. As a result, the FTR rollers for color (yellow, magenta, cyan) and black are in contact with the accumulator belt at the same time.



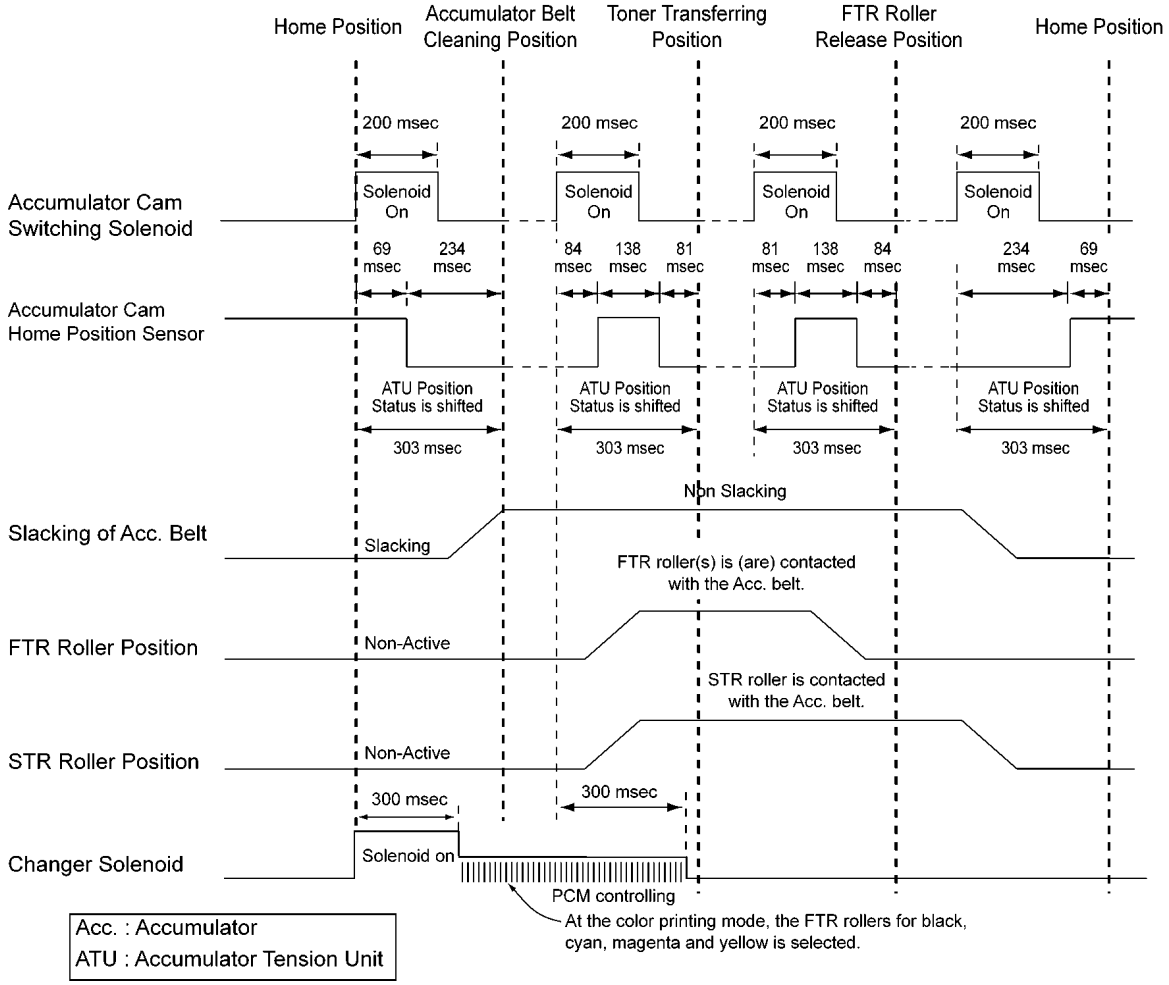
7.2.6. Waste Toner Cartridge Stirring

The waste toner cartridge is engaged with the WTC drive cam as shown below. The WTC drive cam is fixed to the cam shaft in the accumulator tension unit. The WTC drive cam is rotating in the arrow (A) direction by the cam shaft. When the cam shaft rotates one full turn, the WTC drive cam rotates 4 full turns. This rotation moves the waste toner cartridge in the arrow (B) direction, stirring the toner in the waste toner cartridge. By this shuttling movement of the waste toner cartridge, the toner falls to the bottom of waste toner cartridge.



7.2.7. Timing Chart

The following chart indicates the timing to the movement of accumulator tension unit.



7.3. Print Process

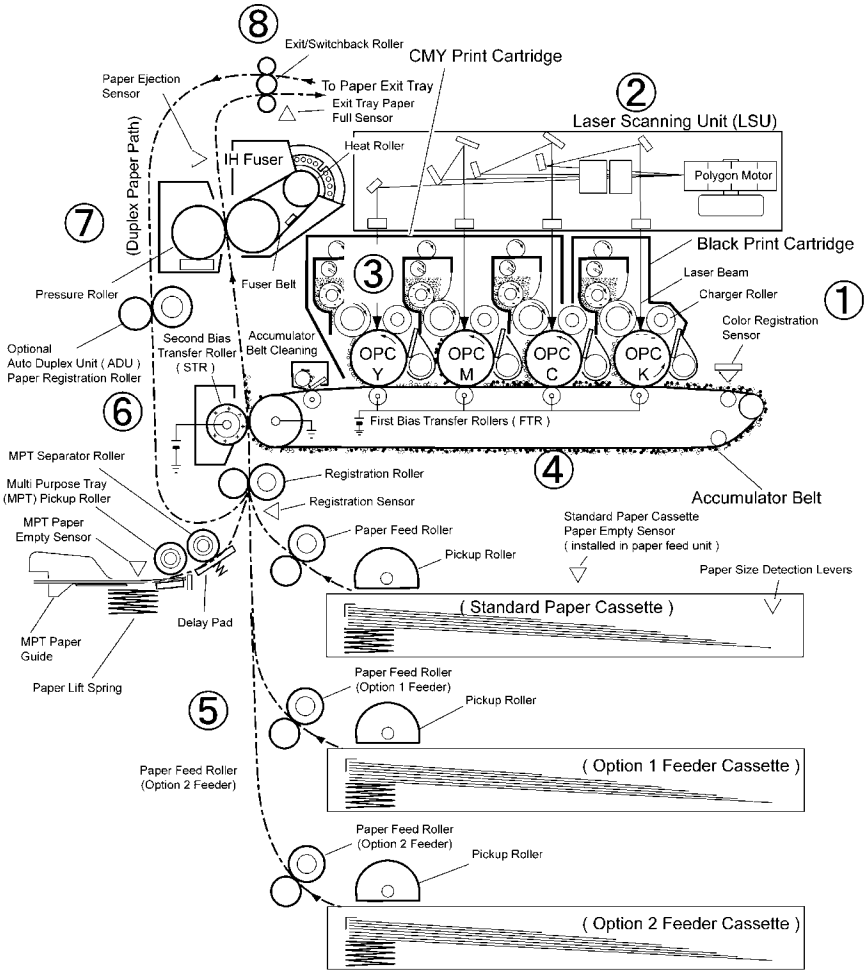
This Laser Printer creates an image on paper using a technique called laser electrophotography. The printer uses the electrographic process known as Discharged Area Development, or “write black”. In this process, a digitally modulated laser scans laterally across a rotating OPC (Organic Photo Conductive) drum that has been negatively charged. Wherever the OPC drum is exposed by laser beam, the image is written and toner is transferred.

To generate a color image, the OPC drum suitably rotate to the image length, one for each primary color and black. During each successive pass, the laser exposes the portions of OPC drum that correspond to the primary color’s component of the image. Toner is attracted to the laser-exposed portions of the OPC drum.

As each color layer is developed on the each OPC drum, they are transferred to the accumulator belt until all four color layers eventually reside one on top of the other on the accumulator belt. At this point, a sheet of paper is advanced under the accumulator belt and the toner is transferred to the sheet of paper. The paper advances to the fuser, where heat and pressure permanently bond the toner to the paper. From the fuser, the paper is driven to the output tray.

A cleaning blade scrapes residual toner from the OPC drum before the next primary color toner is applied to the OPC drum. This prevents contamination of the next color layer. The cleaning blade is in constant contact with the OPC drum.

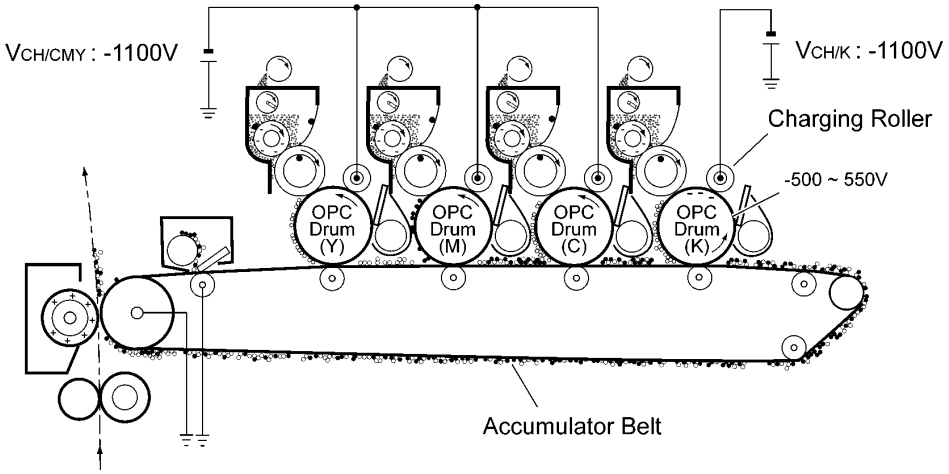
An accumulator belt cleaner scrapes residual toner from the accumulator belt. This prevents “ghosting “of the next print. The blade only comes in contact with the belt after the accumulated toner layers are transferred to the sheet of paper



Each block is explained in the following sections.

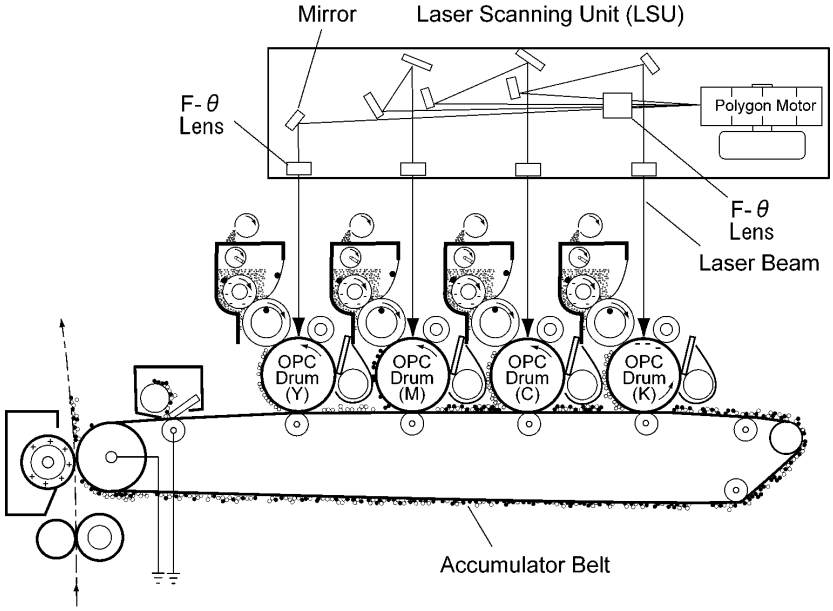
① 7.3.1 Charging	⑤ 7.3.5 Paper Pickup
② 7.3.2 Laser Exposure and Scanning	⑥ 7.3.6 Toner Transfer to Paper
③ 7.3.3 Developing	⑦ 7.3.7 Fusing
④ 7.3.4 Toner Transfer to the Accumulator Belt	⑧ 7.3.8 Paper Exit and Paper Switchback

7.3.1. Charging



The charging roller, comes in contact with the OPC drum surface and charged to approximately -1100 volts, and ensures a uniform negative potential of approximately -500 ~ 550 volts on the OPC drum surface by the charging roller, depending on the selected dot per inch printing and ambient temperature.

7.3.2. Laser Exposure and Scanning



7.3.2.1. Laser Exposure

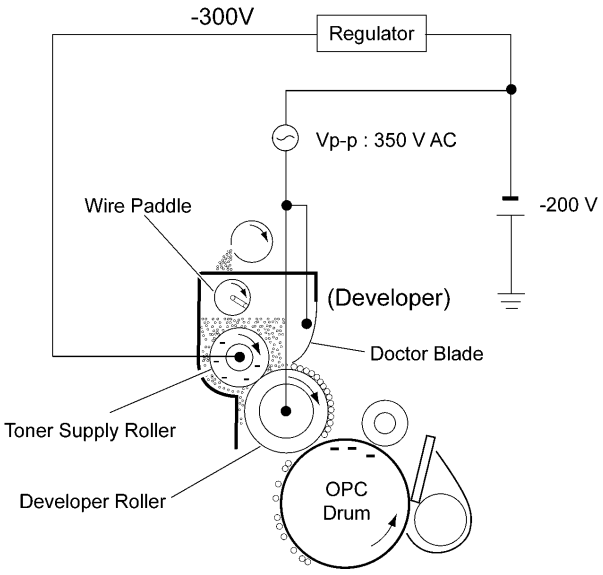
As the OPC drum rotates, the uniformly charged OPC drum is exposed by the modulated laser beam. The vertically-moving OPC drum passes in front of horizontally scanning laser beam, and the negative charge on the OPC drum surface are neutralized by the laser beam. This forms a latent image.

Laser output power is either approximately 0.25 mW or 0.4 mW on the OPC drum surface, depending on whether the printer is printing in 1200 dots per inch (dpi) mode or 600 dpi mode. The laser exposure, the negative potential on the OPC drum varies from approximately -500 ~ 550 volts (unexposed) to -50 volts (fully exposed).

7.3.2.2. Laser Scanning

A laser diode generates the laser beam, and lenses and mirror in the laser scanner direct the beam to the OPC drum. The beam is made parallel by the collimator lens and is directed at the rotating polygonal mirror, attached with the polygon motor. The beam is made parallel by the collimator lens and is directed at the rotating polygon mirror. The polygon mirror rotates at a constant revolutions approximately 18,000 per minute. This transforms the beam into a horizontally scanning beam, which is directed through the primary lens, altering the beam's angular rotation motion into a constant horizontal motion. The toric correction lens corrects the beam for any vertical misregistration. Next, the beam reflects off of a mirror and passes through a window where it scans across the rotating OPC drum. At the beginning of each horizontal sweep, the horizontal sync mirror deflects the laser beam to the horizontal sync sensor. This informs the engine control board that the laser beam is beginning its horizontal sweep and that it can begin to modulate the signal with the data to be printed on that line of the image.

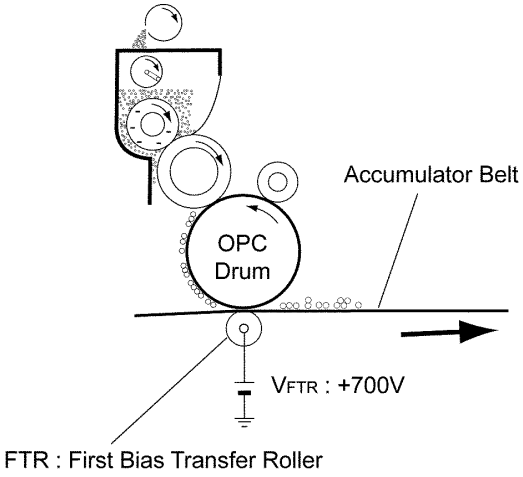
7.3.3. Developing



As the OPC drum continues to rotate, it passes by the developer roller. The developer roller is charged to a potential approximately -200 volts (350 VAC p-p). Toner is attracted to the exposed portions of the OPC drum in reverse proportion to the negative charge. The greatest amount of toner is transferred to the most positive potential. The developer roller rotates at 1.33 times the speed of the OPC drum to ensure a constant supply of toner.

Inside each developer is a toner supply roller that rotates in the opposite direction from the developer roller. This supplies a layer of toner onto the developer roller. The doctor blade smooth and evenly distributes the toner on the developer roller. Gear-driven paddle churn the toner and keep it fluidized and moving towards the developer roller.

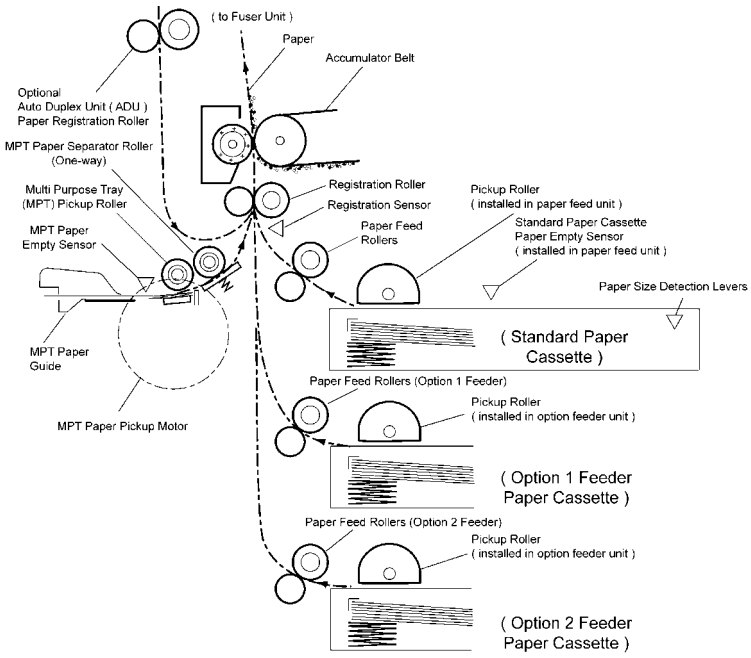
7.3.4. Toner Transfer to the Accumulator Belt



As the OPC drum rotates, in contact with the accumulator belt, which is rotating at the same speed. Located under the accumulator belt at the contact point with the OPC drum, the first bias transfer roller carries a charge approximately +700 volts (FTR voltage). This strong potential attracts and holds the toner from the OPC drum to the accumulator belt. The four color layers create while the accumulator belt makes one complete rotation.

Any toner remaining on the OPC drum after the transfer to the accumulator belt is scraped off by the OPC drum cleaning blade, which is always in contact with the OPC drum. This leaves the OPC drum clean for the next layer of toner to be transferred from the developing roller into the developer.

7.3.5. Paper Pickup

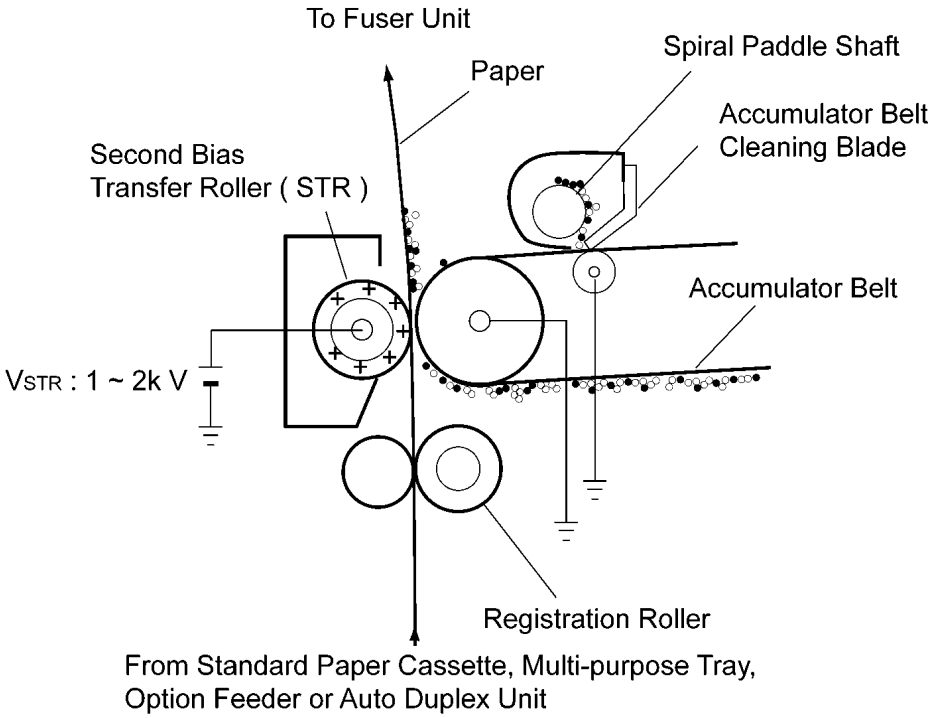


The cam-shaped pickup rollers are driven by the BK (black print cartridge) drive motor and force a sheet between the paper feed rollers. The pickup roller completes only one rotation to pick a sheet of media from the paper cassette. This will push the sheet of paper to the paper feed rollers but does not pick a second sheet. Alternately, depending on the user's selection, media may be picked from the multi-purpose tray. The MPT tray pickup roller is driven by the MPT paper pickup motor and feeds a sheet of media or an envelope into the registration roller.

The paper feed rollers advance the sheet of paper to the registration roller. The paper is driven lightly against the stationary registration rollers to create a slight buckle in the paper, aligning the sheet of paper. At this point, the paper remains stationary (since the registration roller clutch in the paper feed unit is not yet energized) until the image is ready to be printed on the paper. The registration sensor detects whether the sheet of paper arrived at the registration roller after being properly picked and traveling through the paper feed rollers.

The paper feed unit has the standard paper cassette paper empty and registration sensors. The standard paper cassette has the MPT paper empty sensor for multi-purpose tray and the paper size detection levers. The standard paper cassette paper empty sensor detects whether the paper is set in the standard paper cassette. The paper size detection levers are used for detecting paper size and whether the standard paper cassette is installed in the printer. The MPT paper empty sensor detects whether the paper is set in the MPT tray.

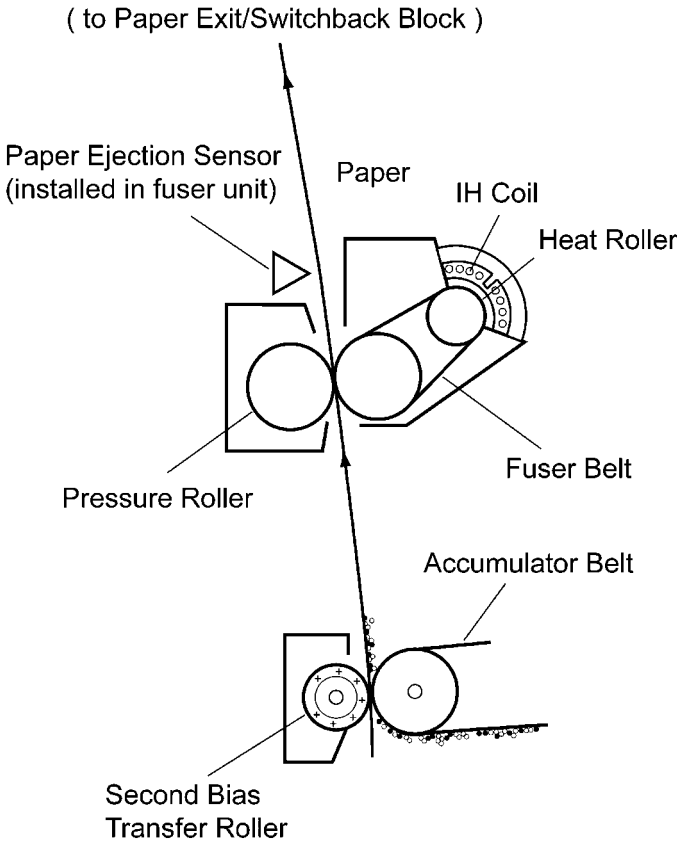
7.3.6. Toner Transfer to Paper



Once all four layers of toner reside up on the accumulator belt, the registration roller clutch is energized to advance a sheet of paper (which has already been picked) to the second bias transfer roller. The toner image on the rotating accumulator and the paper that is being fed into the image unit are synchronized for proper alignment. The leading edge of toner image on the accumulator belt is aligned 4 mm from the leading edge of the paper. A strong positive voltage in the second bias transfer roller attracts the toner from the accumulator belt to the paper. The second bias transfer roller voltage is approximately +1400 volts. This voltage varies depending on the ambient temperature, humidity, print speed and media being printed upon. The paper (or transparency film) advances at the same speed as the accumulator belt.

As the toner is being transferred to the paper, the accumulator belt cleaning blade is activated. This blade scrapes any remaining traces of toner from the accumulator belt prior to the next image transfer. The scraped toner is discharged to the waste toner cartridge by the spiral paddle shaft.

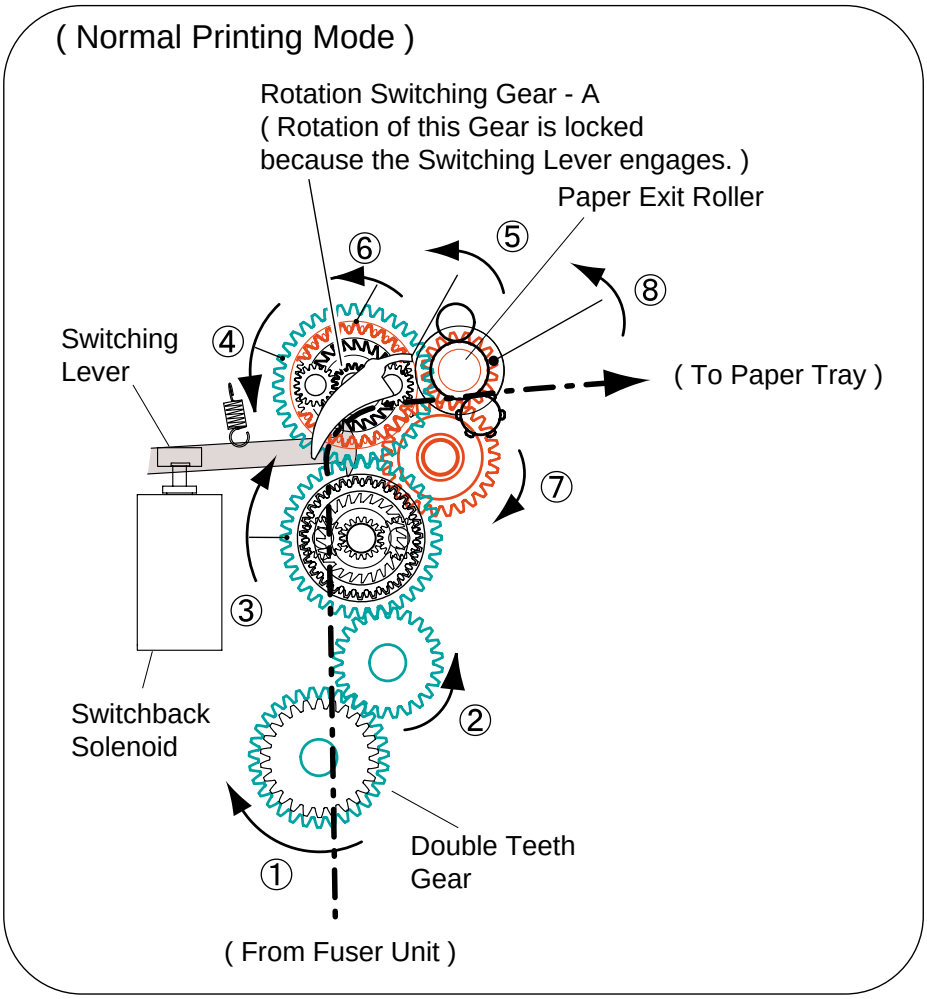
7.3.7. Fusing



After toner image has been applied to the paper, it passes through the fuser. When the BK motor starts to rotate, the IH coil is turned on, heating the heat roller. As a result, the fuser belt, contacted with the heat roller surface, is heated by the heat roller. A heated fuser belt melts the toner and pressure drives it into the paper. The melted toner bonds to the paper. After fusing, the paper advances to the output tray. When the printer is idle, the IH coil is turned off and the fuser belt is not heated. At the 600 dpi printing mode, the fuser belt is set to approximately 175°C. This fuser belt temperature varies depending on 1200 dpi printing mode, thick paper printing mode, transparency printing mode, etc. The fuser unit has the paper ejection sensor, which detects the sheet of paper as it leaves the fuser.

7.3.8. Paper Exit and Paper Switchback

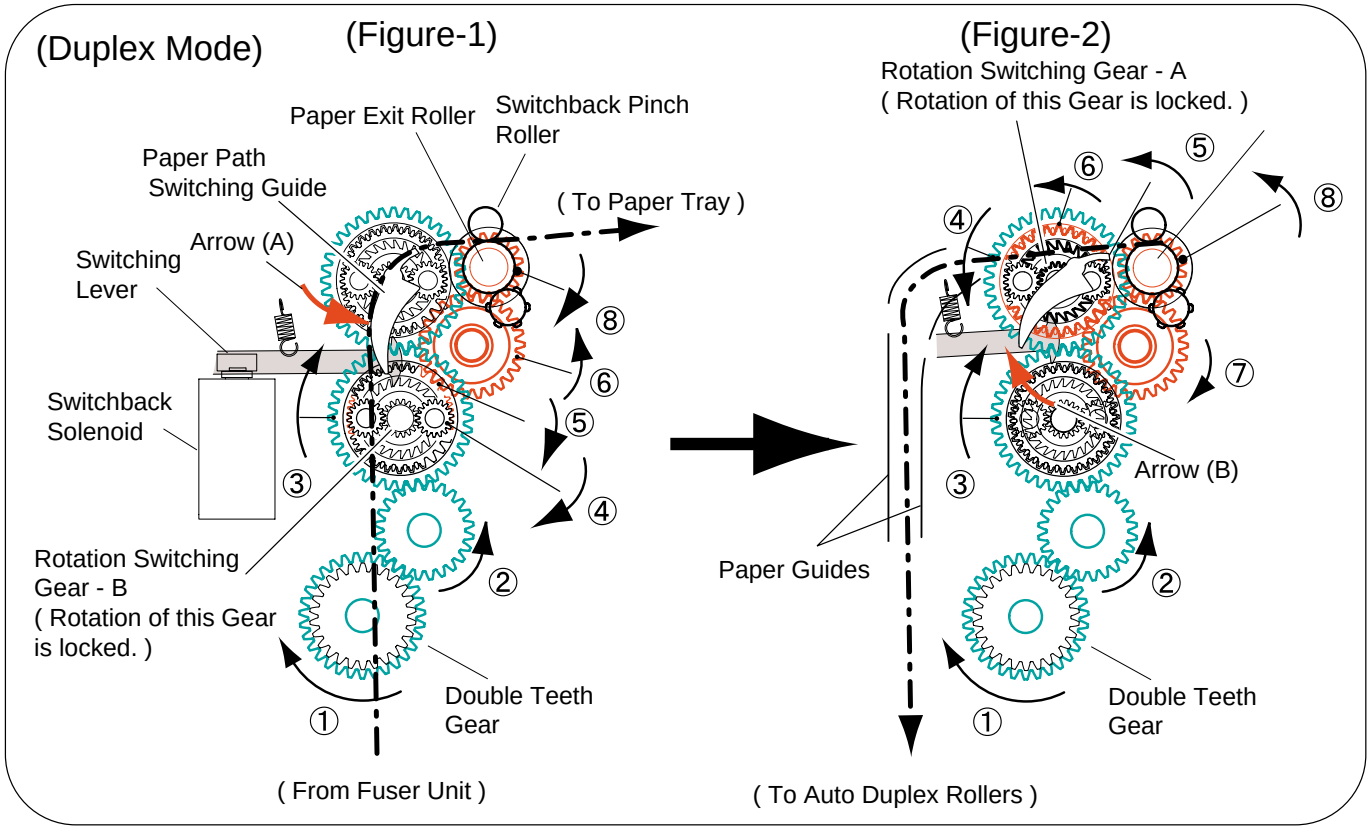
7.3.8.1. Normal Printing Mode (Not Duplex Printing Mode)



After fusing, paper is fed to the output tray by the paper exit roller. Rotation from the BK motor is transmitted to the double teeth gear. The rotation of double teeth gear is transmitted to the paper exit roller gear through intermediate gears in order of numbers (1 - 8). The arrows indicate the rotation direction of each gear.

The Paper is ejected face down and stored in the output tray. The paper full sensor detects whether the paper output tray is full, and if the tray is full, the message “Output Tray Full“is displayed on the LCD panel.

7.3.8.2. Duplex Printing Mode (Paper Switchback)



The switchback solenoid is turned on by the time the top edge of paper passes by the paper jam sensor on the fuser unit. The switching lever engages with the switching gear-B, and the rotation of rotation switching gear-B is locked. As a result, the rotation from the BK motor is transmitted to the paper exit roller in order of numbers (1 - 8) through the double teeth gear. The arrows indicate the rotation direction of each gears.

Also, the switching lever moves the paper path switching guide in the direction of arrow (A) as shown in the figure-1. This advances the sheet of paper between the paper exit roller and switchback pinch roller. The paper is fed to the output tray by the paper exit roller and pinch roller. At the proper time, the switchback solenoid is turned off, which returns the switching lever to the home position. The rotation switching gear is locked by the switching lever, and the rotation from the BK motor is transmitted to the paper exit roller in order of numbers (1 - 8) through the double teeth gear. As a result, the paper exit roller rotates in the reverse direction. The paper path switching guide also is moved in the direction of arrow (B) (see figure-2) and returns to the home position. The paper is fed to the auto duplex rollers in the optional Auto Duplex Unit through the paper guides along the paper path switching guide. Further, the paper is fed to the registration roller by the auto duplex rollers and advanced to the fuser unit. After fusing, the paper arrives the paper exit roller and is fed to the output tray by the paper exit roller.

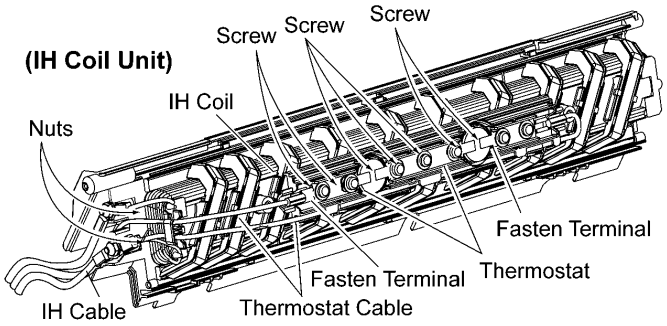
8 Removal and Replacement Procedures

Before performing the following steps, unplug the AC power cord, then remove the 4 toner cartridges (cyan, magenta, yellow and black), 2 print cartridges (black and color), waste toner cartridge and standard paper cassette from the printer.

Caution: Don't loosen or remove any component (nuts, screws, fasten terminals, etc.) on (from) the IH coil unit.

A large current (approx. 12Arms: 100V AC Power) flows in the IH coil, IH cable, thermostat cables and thermostats. The nuts, screws and fasten terminals connect the IH cable to the IH coil and thermostats. For protection from fire, smoke and other hazard, don't loosen or remove any component on (from) the IH coil unit.

Nuts and Screws :
Don't loosen or remove any component (nuts, screws, fasten terminals, etc.) on (from) the IH coil unit.



The IH cable is connected to the IH coil and thermostats by the nuts, screws and fasten terminals. When the IH unit is turned on, the current (approx. 12 Arms : 100V AC Power) is supplied to the IH coil and thermostats through the IH cable & thermostat cables. If loose (or removed) these nuts, screws and fasten terminals, the contact resistances at these connections increases. This will generate dangerous intense heat at these connections when turning on the IH unit. As a result, the IH unit (or printer) may emit smoke or can cause a fire at the worst. Don't remove or loosen any component from (on) the IH coil unit. If removing or loosening is done, replace it with a new IH unit for servicing or repairing.

8.1. Fuser Unit

Caution:

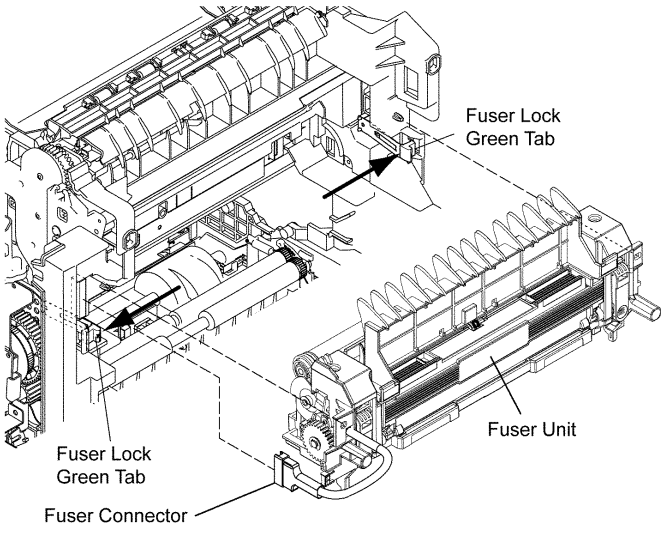
1. The fuser is hot. To avoid personal injury, wait 1 hour for fuser to cool after turning the power off, and then service it.
2. When replacing parts, use only the manufacturer's specified components.
3. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.

(1) Open the front door.

(2) Disconnect the fuser connector from the printer.

(3) Move the 2 fuser lock green tabs in the arrow directions to unlatch the fuser unit.

(4) Remove the fuser unit.

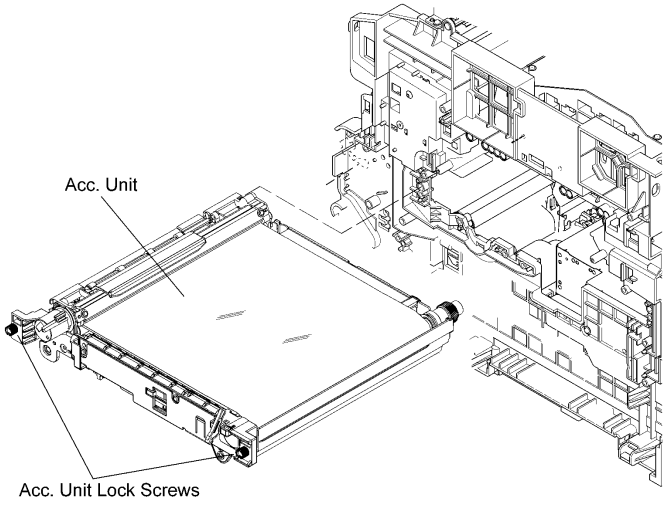


8.2. Accumulator Unit (Acc. Unit)

(1) Open the right cover.

(2) Loosen the 2 Acc. unit lock screws.

(3) Slide out the Acc. unit from the printer with care to prevent damage to accumulator belt.



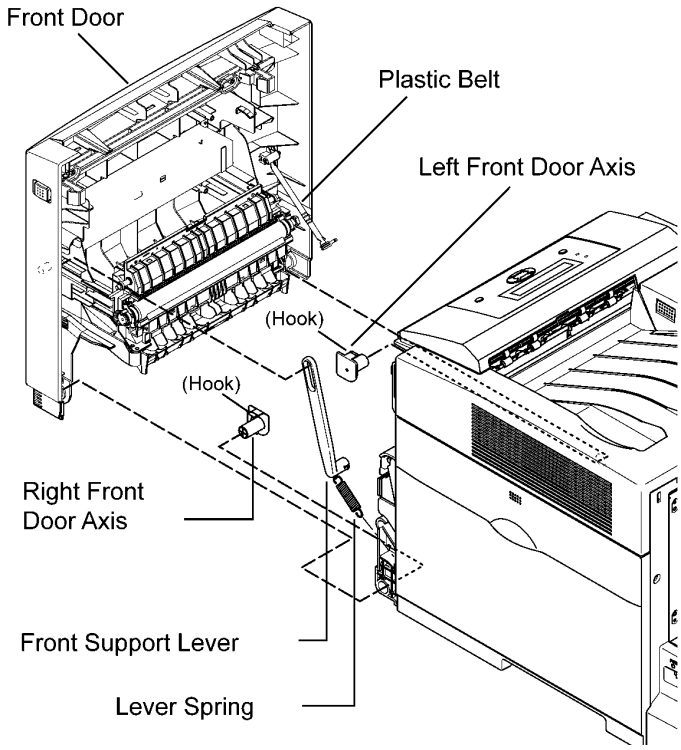
8.3. Front Door Cover and STR (Second Transfer Roller) Bias Assembly

8.3.1. Front Door with STR Bias

(1) Remove the left and right front door axes by releasing the hooks.

(2) Release the plastic belt and front support lever from the front door.

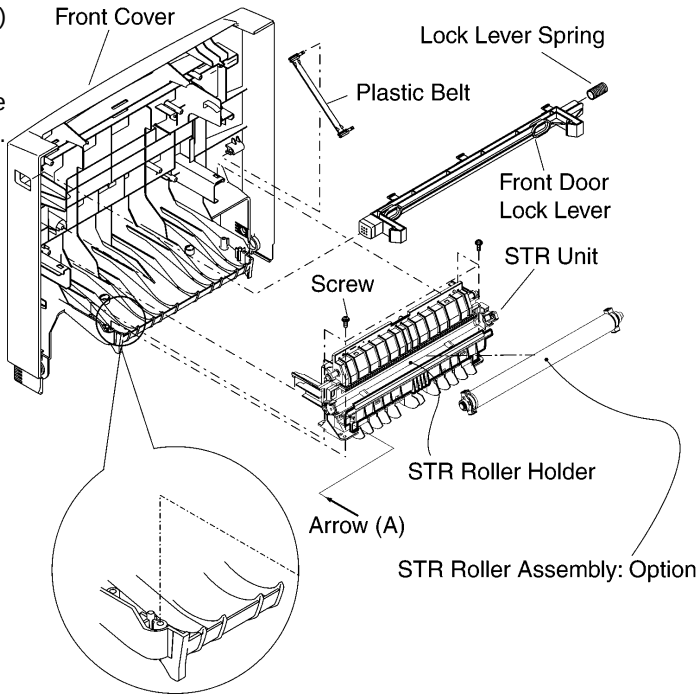
(3) Remove the front door.



8.3.2. STR (Second Transfer Roller) Unit

(1) Release the STR roller cover by moving it in the arrow (A) direction, then remove a STR Roller Assembly.

(2) Remove the 4 screws while pushing the STR holder in the arrow (A) direction and STR Unit from the front door cover.

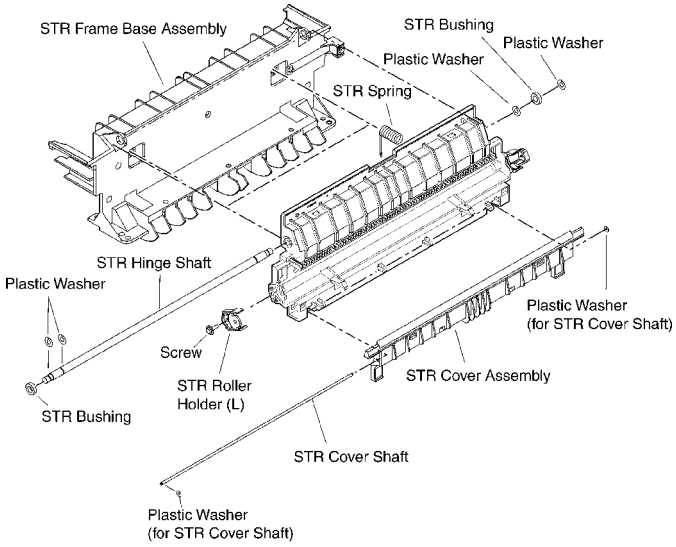


(3) Remove 4 plastic washers and 2 STR bushings from the STR hinge shaft.

(4) Slide out the STR hinge shaft from STR unit.

(5) Separate the STR holder assembly from the STR frame base assembly.

(6) If necessary, remove the STR roller holders (1 screw), STR springs, STR cover assembly, etc.

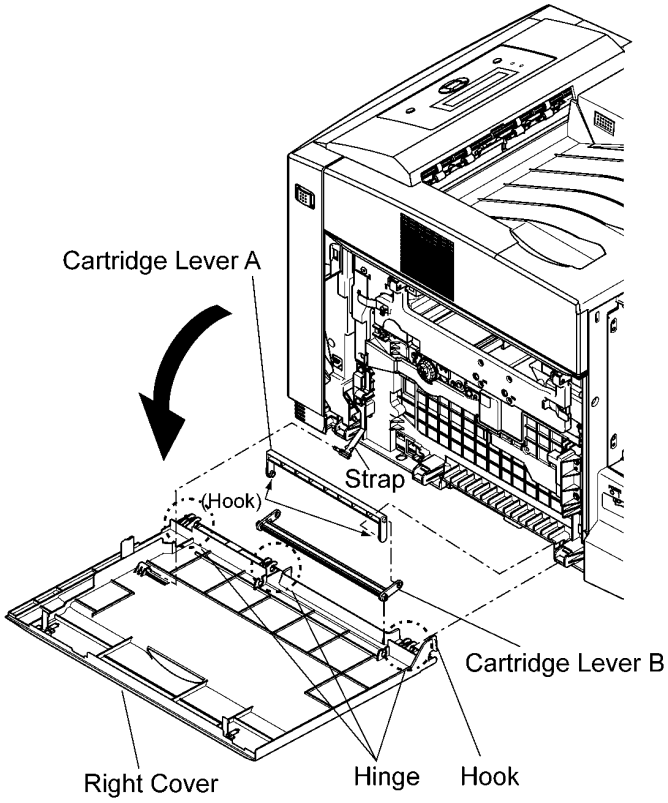


8.4. Right Cover

(1) Release the 2 hooks of the cartridge lever A.

(2) Release the plastic strap from the right cover.

(3) Remove the right cover while releasing the 3 hinges and hook from the printer chassis.

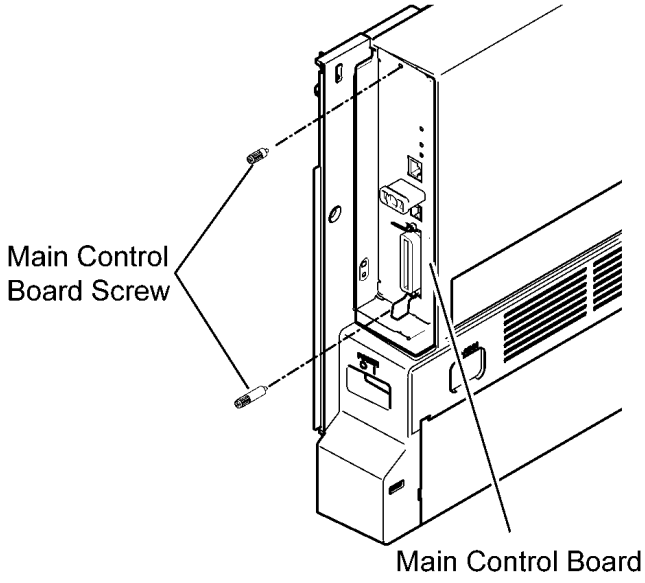


8.5. Rear, Left and Top Covers

8.5.1. Rear Cover

(1) Remove the 2 main control board screws.

(2) If necessary, remove the main control board.

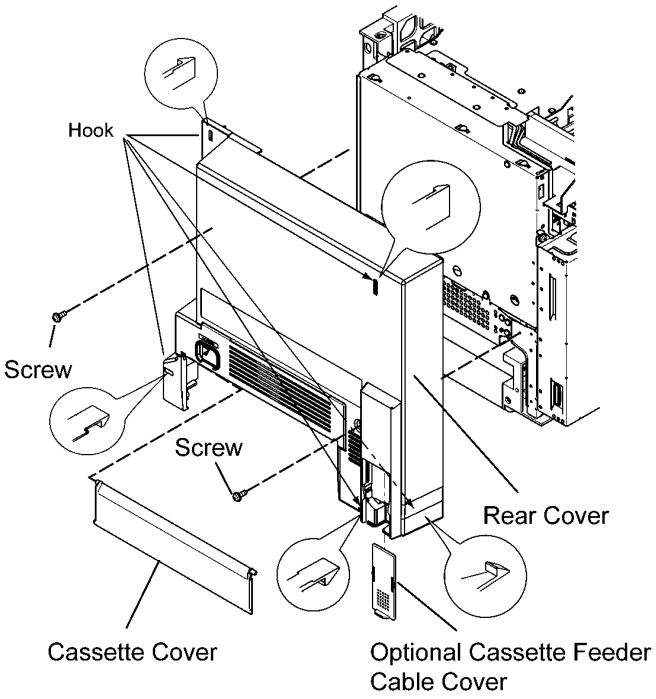


(3) Remove the 2 screws.

(4) Release the 5 hooks, using a small flat blade screw driver.

(5) Remove the rear cover.

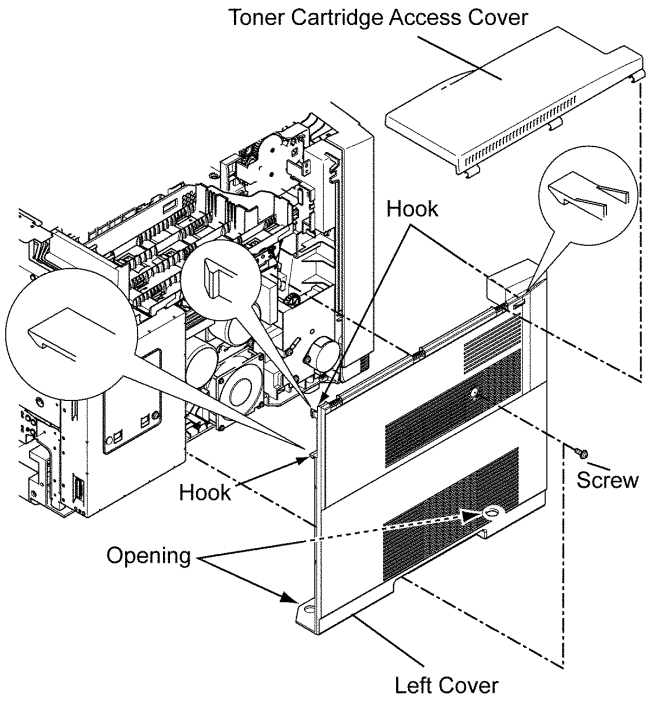
(6) If necessary, remove the cassette cover and cable cover from the rear cover.



8.5.2. Left Cover

(1) Remove the screws (2).

(2) Release the openings from the 2 projections on the bottom side of the printer while removing the left cover with the toner cartridge access cover while releasing the 3 hooks.



8.5.3. Top Cover with LCD Panel

(1) Release the 7 hooks to separate the LCD panel cover from the top cover.

(2) Separate the LCD panel cover with the LCD panel.

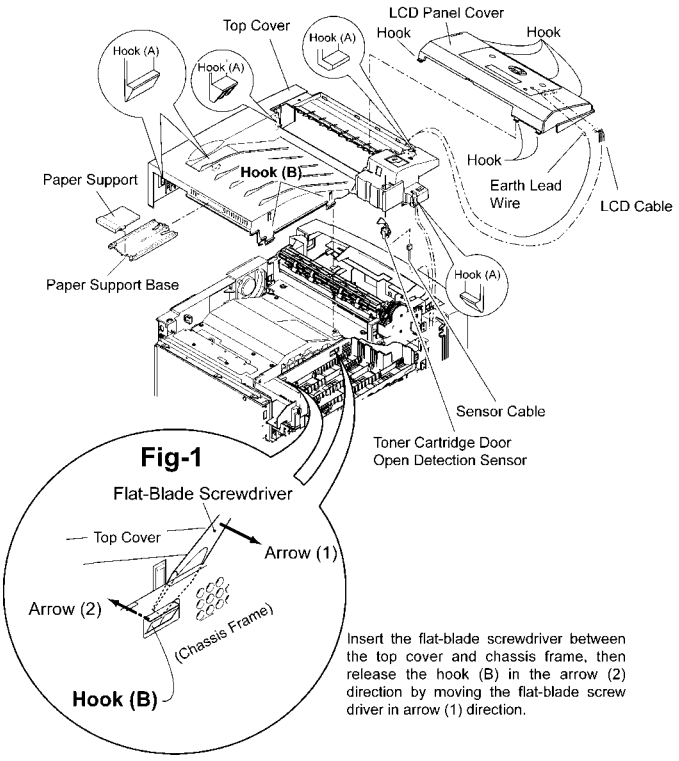
(3) Disconnect the LCD cable and earth lead wire.

(4) Release the 5 hooks (A) from the printer chassis.

(5) Release the 2 hooks (B) from the printer chassis using a small flat-blade screwdriver as shown in the Fig-1.

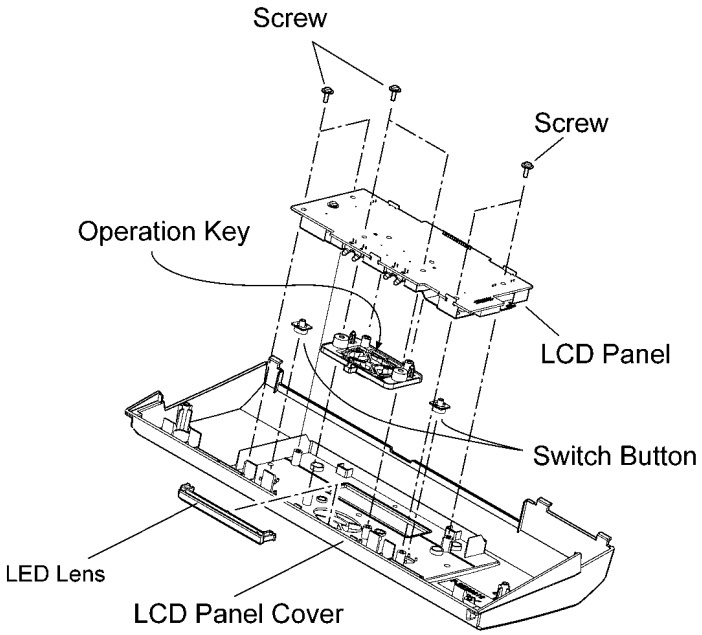
(6) Separate the top cover from the chassis.

(7) Disconnect the sensor cable from the top cover.



(8) Remove the 6 screws and LCD panel.

(9) Remove the 2 switch buttons and operation key.



8.6. Color Registration Sensor

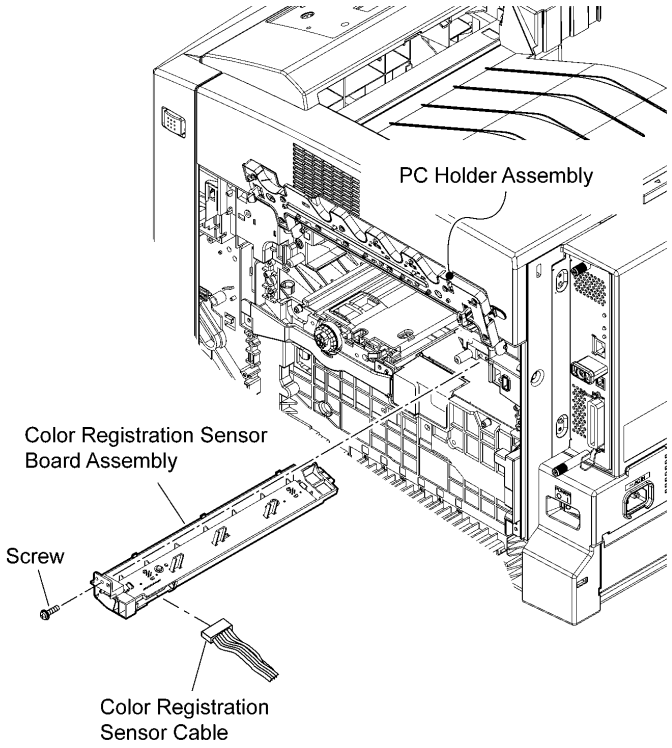
Before performing the following steps, unplug AC cord, then remove the 4 toner cartridges (cyan, magenta, yellow and black), waste toner cartridge and accumulator unit from the printer

(1) Open the right cover.

(2) Open the PC holder assembly.

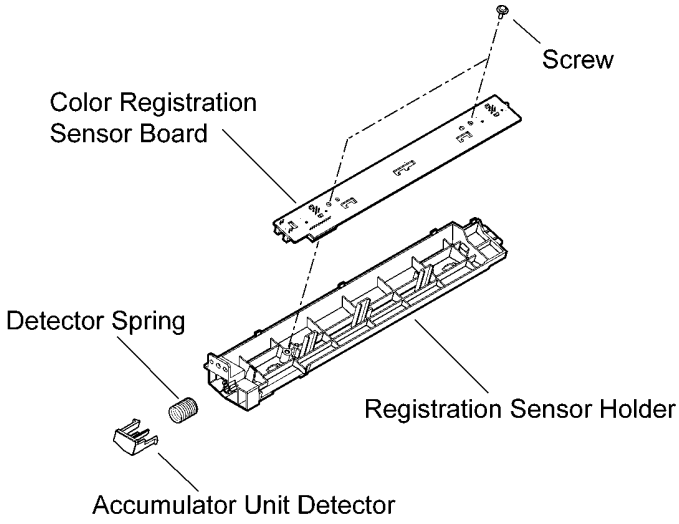
(3) Remove the color registration sensor board assembly (1 screw).

(4) Disconnect the color registration sensor cable.



(5) Separate the color registration sensor board from the registration sensor holder (2 screws).

(6) If necessary, remove the accumulator unit detector and detector spring from the registration sensor holder.



Note:

When replacing the color registration sensor board, perform the “Mis-Reg.Tbl Reset” (see the section 6.14 “Color Correction Item Menu”.) in the Service Mode to initialize the paprameter regarding the color registration.

8.7. Engine Control Board, Toner Cartridge Holder, Cartridge Drive Unit, Paper Pickup Motor, Main Drive Unit, Bias Unit, Fan Motor and Fan Motor Duct

8.7.1. Engine Control and Temperature/Humidity Sensor Boards

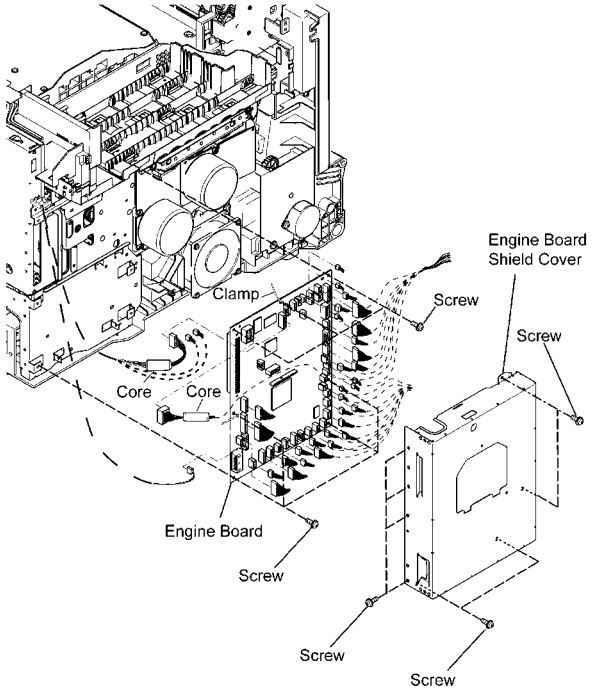
Before performing the following steps, remove the left, top and rear covers.

(1) Remove the engine board shield cover (8 screws).

(2) Disconnect all cables from the engine control board.

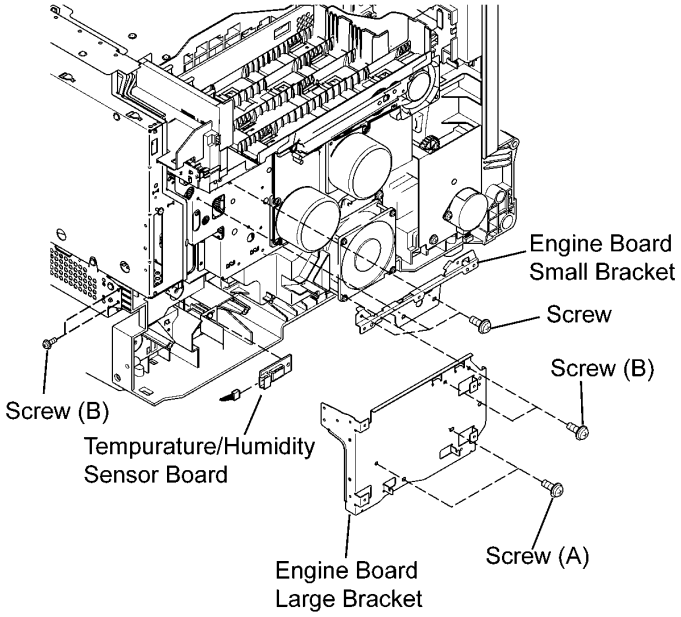
(3) If the main control board is installed, remove it.

(4) Remove the engine board (7 screws).



(5) Remove the engine board small (3 screws) and large brackets [2 screws (A) and 4 screws (B)].

(6) Remove the temperature/humidity sensor board.



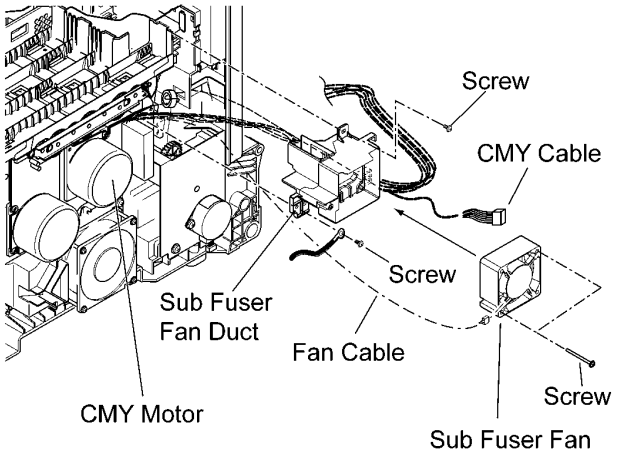
8.7.2. Sub Fuser Fan and Sub Fuser Fan Duct

(1) Remove the sub fuser fan (2 screws).

(2) Disconnect the fan cable from the sub fuser fan.

(3) Disconnect the CMY cable from the CMY motor.

(4) Remove the sub fuser fan duct (2 screws).



8.7.3. Toner Cartridge Drive Unit, Toner Cartridge Holder and Fuser Fan Duct Assembly

Caution:

In the toner cartridge holder assembly, the toner is stored. Remove or handle the toner cartridge holder assembly, using care that toner is not spilled.

When removing the toner cartridge holder, first remove the toner cartridge drive unit to prevent the toner from spill, then remove the toner cartridge holder.

(1) Remove the 2 screws from the toner cartridge drive unit.

(2) Separate the toner cartridge drive unit from the chassis.

(3) Disconnect the toner empty sensor cable from the toner cartridge drive unit.

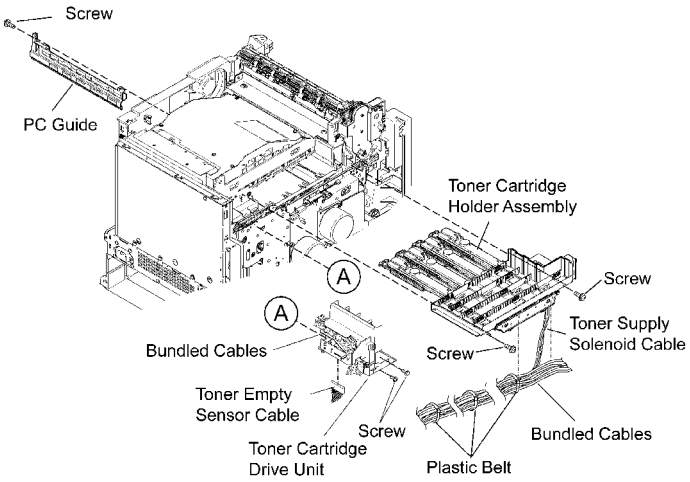
(4) Remove the PC guide (1 screw).

(5) Remove the 2 screws from the toner cartridge holder assembly.

(6) Release the bundled cables by unlatching the cable clamper on the toner cartridge holder assembly.

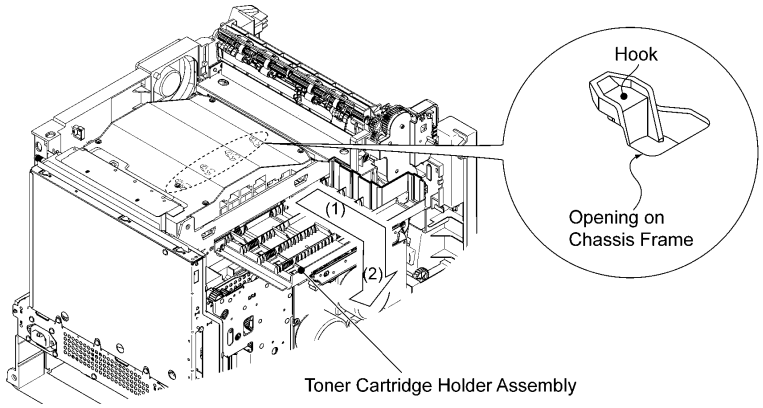
(7) If necessary, cut the 3 plastic belts to release the toner supply solenoid cable from the bundled cables.

(8) Remove the toner cartridge holder assembly (see note).



Note:

The toner cartridge holder assembly is fixed to the chassis frame by 4 hooks. When removing the toner cartridge holder assembly, move it in the arrow direction (1) and (2) to release the hooks from the chassis frame.



8.7.4. Paper Pickup Motor and Motor Bracket

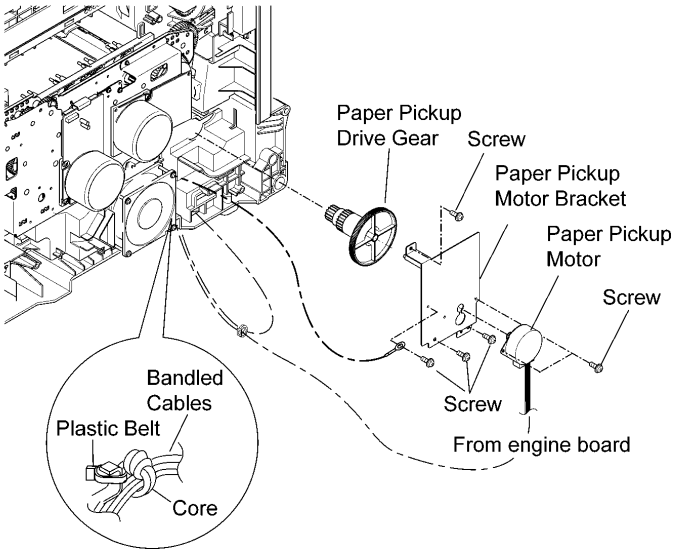
(1) Remove the 2 screws from the paper pickup motor.

(2) If necessary, disconnect the connector CN22 on the engine board, and cut the plastic belts which bundles the pickup motor cable.

(3) Remove the paper pickup motor from the paper pickup motor bracket.

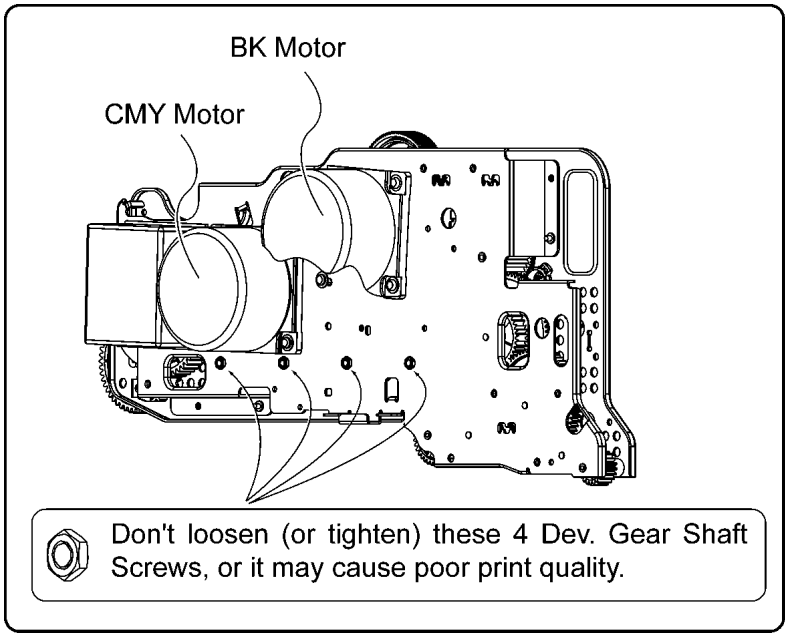
(4) Remove the paper pickup motor bracket (4 screws).

(5) The paper pickup drive gear can be removed from the paper pickup motor bracket.



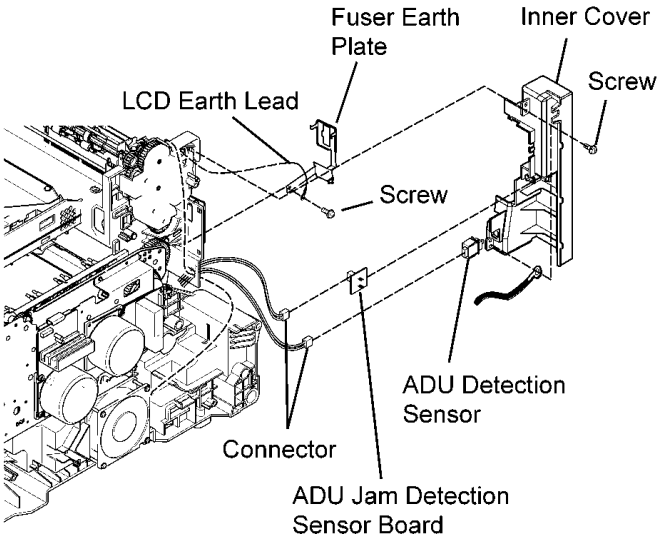
8.7.5. Main Drive Unit

Important Notice: Handling of Main Drive Unit



8.7.5.1. Inner Cover, ADU Jam Detection Sensor Board and ADU Detection Sensor

1. Remove the inner cover (2 screws).
2. Disconnect the 2 connectors from the inner cover.
3. Remove the fuser earth plate (1 screw).
4. If necessary, remove the ADU jam detection sensor board and ADU detection sensor.



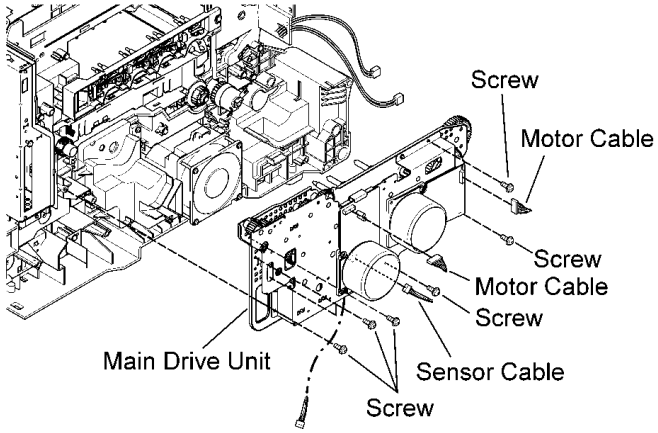
8.7.5.2. Main Drive Unit

1. Remove the 7 screws, securing the main drive unit.
2. If necessary, disconnect the 2 motor cables.
3. Separate the main drive unit from the chassis.
4. If necessary, disconnect the sensor cable from the main drive unit.

Note: For easy re-installation of the main drive unit

When reinstalling the main drive unit, see the section 8.11 "Paper Feed Unit" and remove a clip and the registration clutch from the paper feed unit.

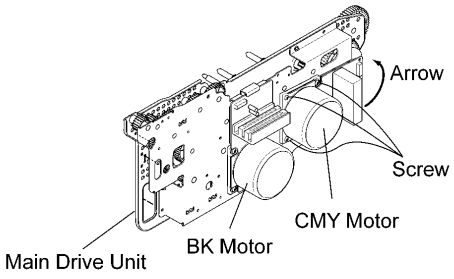
After reinstalling the main drive unit, reinstalling the registration clutch and a clip to the paper feed unit.



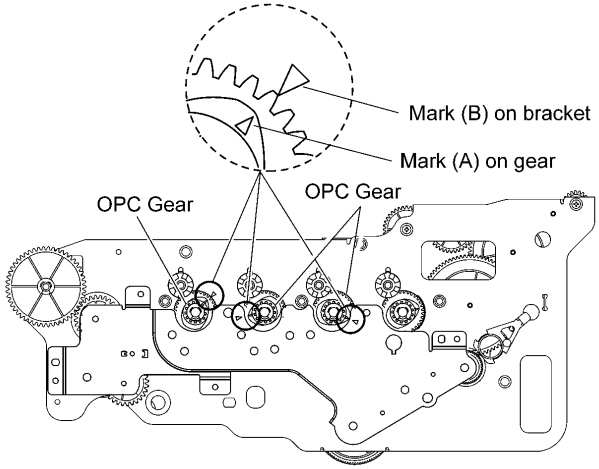
8.7.5.3. Main Drive Unit Disassembly

Notice: Installing CMY Motor

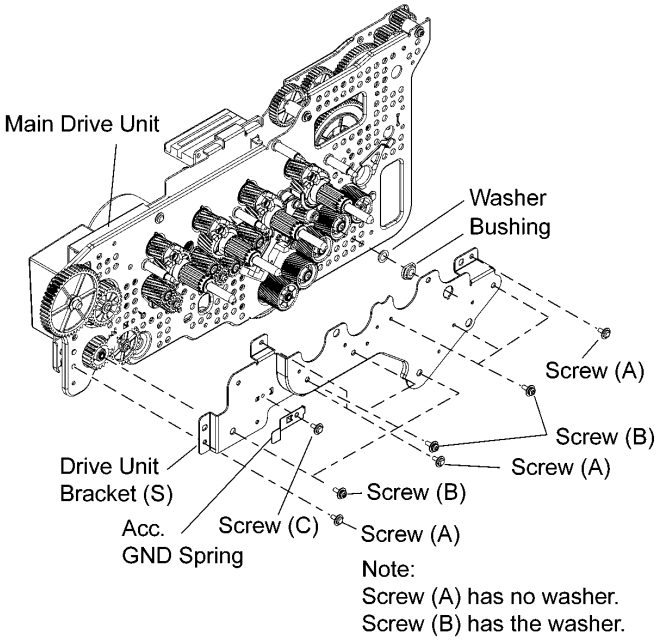
1. The CMY motor must be installed while rotating the CMY motor in the arrow direction, or the main drive unit may not be smoothly installed on the printer because the CMY motor contacts with the paper pickup motor bracket.



2. Make sure that each alignment mark (A) is aligned with the mark (B).
3. If not, remove the CMY motor and adjust the alignment.
   Regarding the detailed alignment information, see the body of this section



1. Remove the 4 screws (A) and 7 screws (B).
2. Remove the drive unit bracket (S), bushing and washer from the drive unit.
3. If necessary, remove the Acc. GND spring (1 screw).



1. Remove the feed idle gear, cam gear, PC (Print Cartridge) idle gear (L), etc.

Caution:

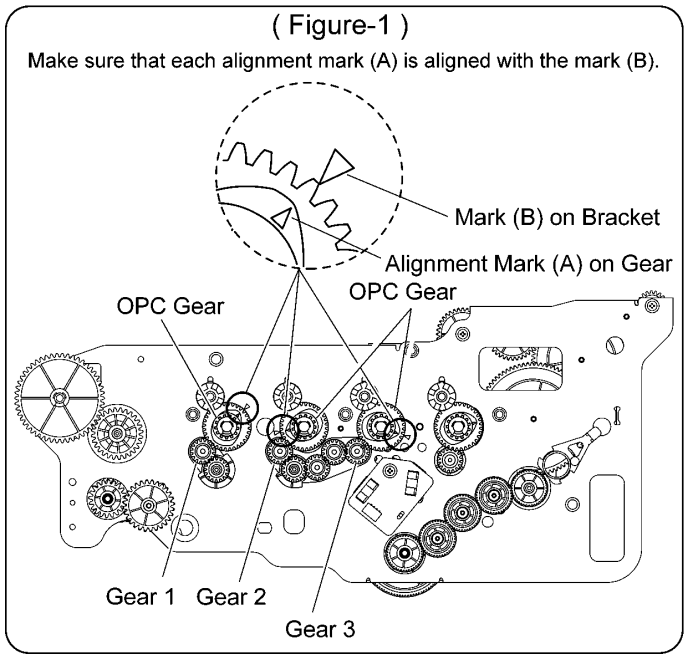
When reinstalling the PC (Print Cartridge) Idle Gears, perform the following steps, and make sure that each alignment mark (A) on the OPC Gear is aligned with the mark (B) as shown below (Figure-1).

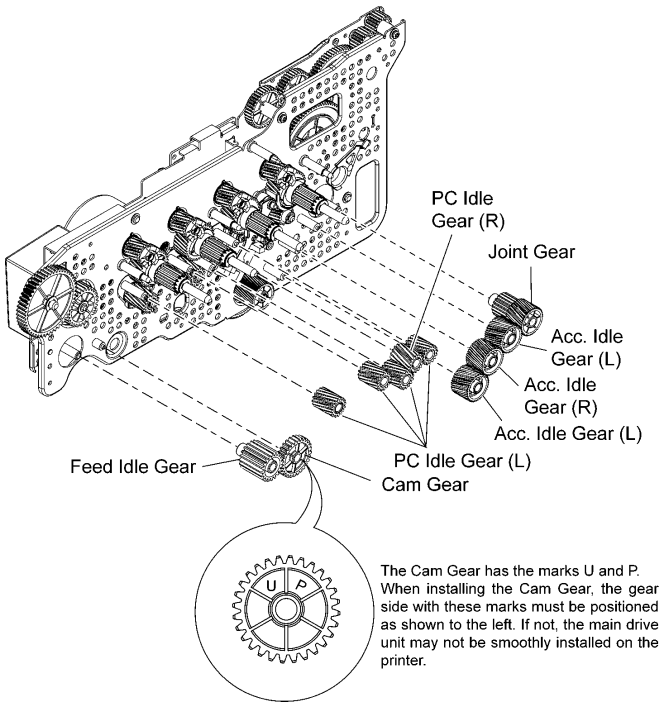
Step 1) : If the Gears 1~3 are installed, remove them.

Step 2) : Align each mark (A) with the mark (B) by rotating the OPC Gear.

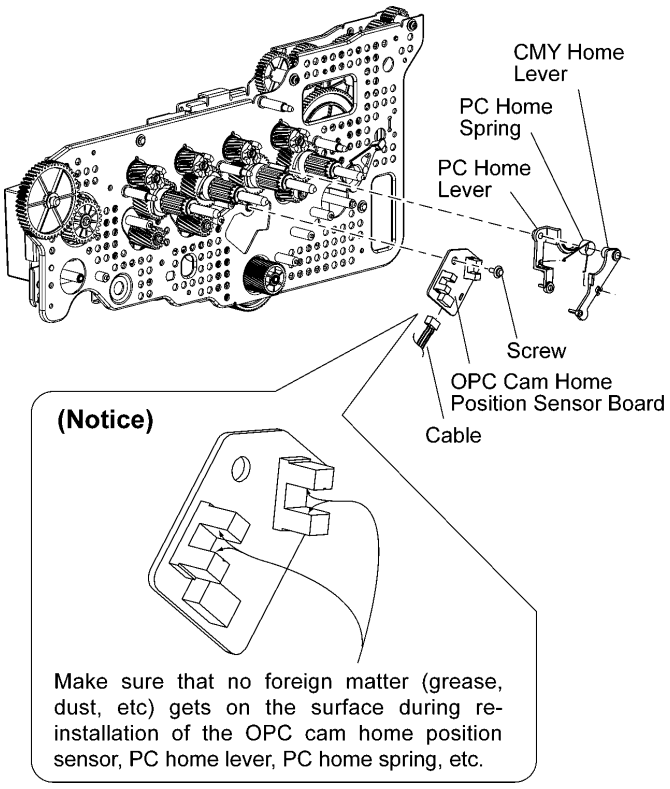
Step 3) : Install the Gears 1~3 in order of gears 1, 2 and 3.

Step 4) : Make sure that each alignment mark (A) is aligned with the mark (B).




PC Idle Gear (R)
Joint Gear
Acc. Idle Gear (L)
Acc. Idle Gear (R)
Acc. Idle Gear (L)
Feed Idle Gear
PC Idle Gear (L)
Cam Gear
U
P
The Cam Gear has the marks U and P. When installing the Cam Gear, the gear side with these marks must be positioned as shown to the left. If not, the main drive unit may not be smoothly installed on the printer.

1. Remove the CMY home lever, PC home spring and PC home lever.
2. Remove the screw and OPC cam home position sensor board.

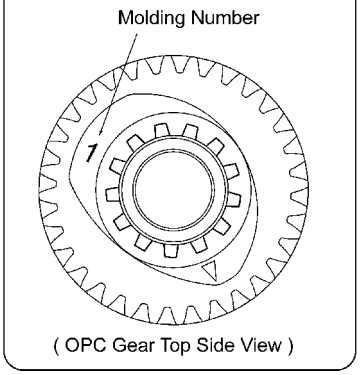

CMY Home Lever
PC Home Spring
PC Home Lever
Screw
OPC Cam Home Position Sensor Board
Cable
(Notice)
Make sure that no foreign matter (grease, dust, etc) gets on the surface during re-installation of the OPC cam home position sensor, PC home lever, PC home spring, etc.

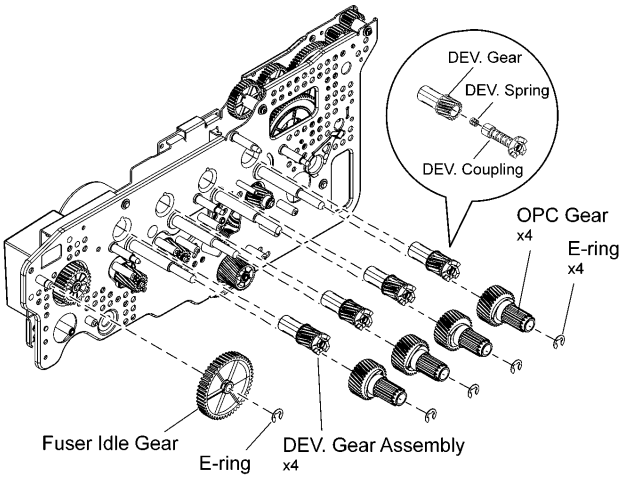
1. Remove the 4 E-rings, 4 OPC Gears and 4 DEV. gear assemblies.

Caution:

When exchanging the OPC Gears, the 4 OPC Gears must be exchanged with new 4 gears with the same molding number at the same time, or the poor printed quality may be caused. Regarding to the molding number, the molding number has been marked on the OPC Gear as shown below (Figure-2).

(Figure-2)

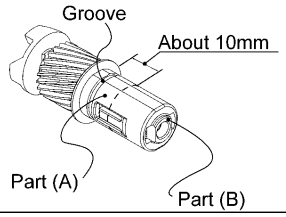




Notice

When reinstalling the DEV. Gear Assembly, check the following:

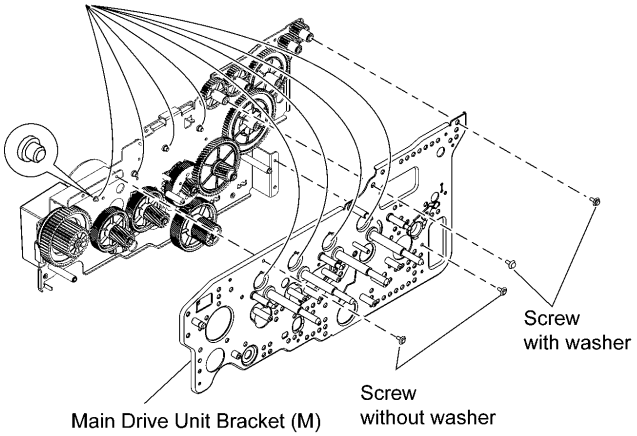
1. Make sure that the grease (OL-HP-500) is applied on the parts (A) and (B).
2. Make sure that the grease (OL-HP-500) is fully applied in the groove.



2. Remove the fuser idle gear (1 E-ring).

1. Remove the drive unit bracket (M) (4 screws).

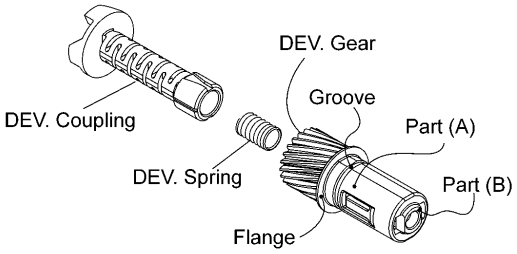
Notice (see caution) :
Before reinstalling the main drive unit bracket (M),
remove the grease from these parts (shafts and bushings).



Caution

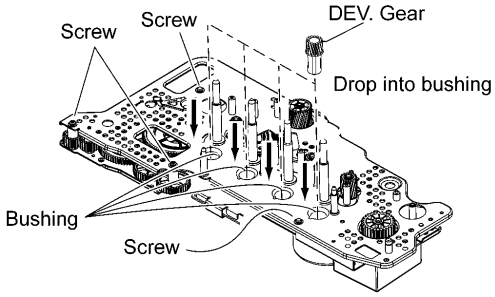
After reinstalling the main drive unit bracket, perform the following.

1. Remove the grease from the groove, part (A) and Part (B) of DEV. gear assembly. Remove the DEV. Spring and DEV. Coupling from DEV. gear assembly.



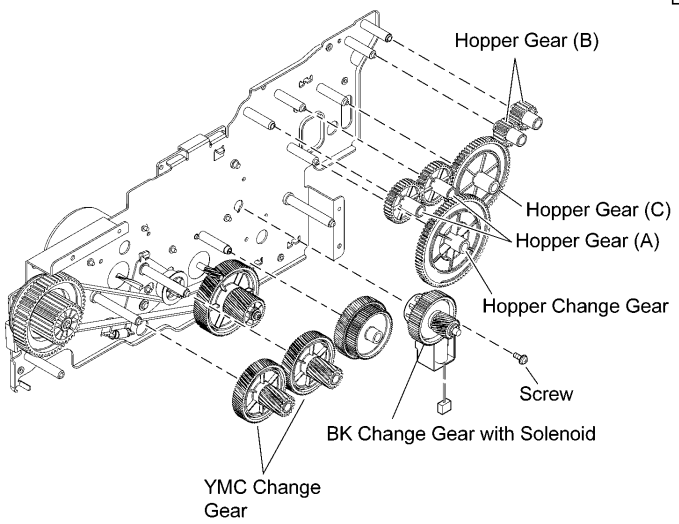
2. Make sure that the DEV. gear drops into the 4 bushing smoothly and the flange of the DEV. gear contacts with the bushing. **If not so (proceed to step 3), this may cause the poor print quality (noise, jitter, etc).**

3. loosen 4 screws, adjust by moving the main drive unit bracket (M), and repeat the above step 2.

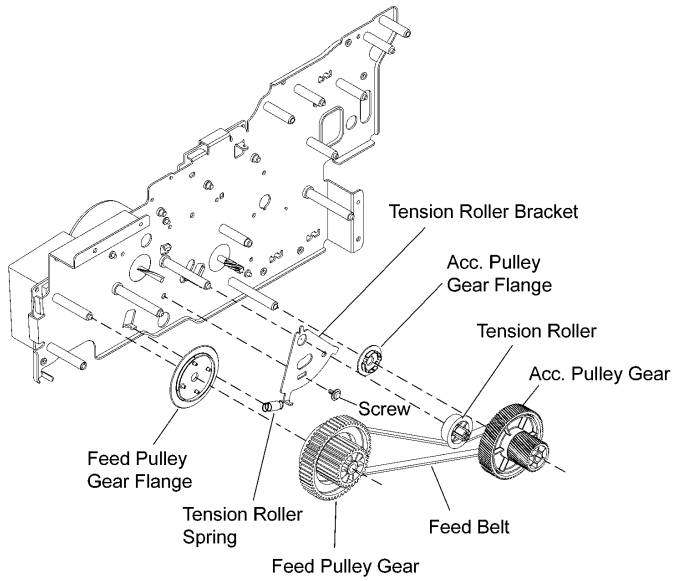


4. After checking, reassembly the DEV. gear assembly, reapply the grease to the DEV. gear assembly and reinstall it.

1. Remove the BK change gear with solenoid (1 screw).
2. Remove the CMY change gear, hopper change gear, etc.



1. Remove the screw and tension roller spring from the tension roller bracket.
2. Remove the tension roller, Acc. (Accumulator Unit) pulley gear, Acc. pulley gear flange, feed pulley gear, feed pulley gear flange and feed belt.



8.7.6. Bias Unit

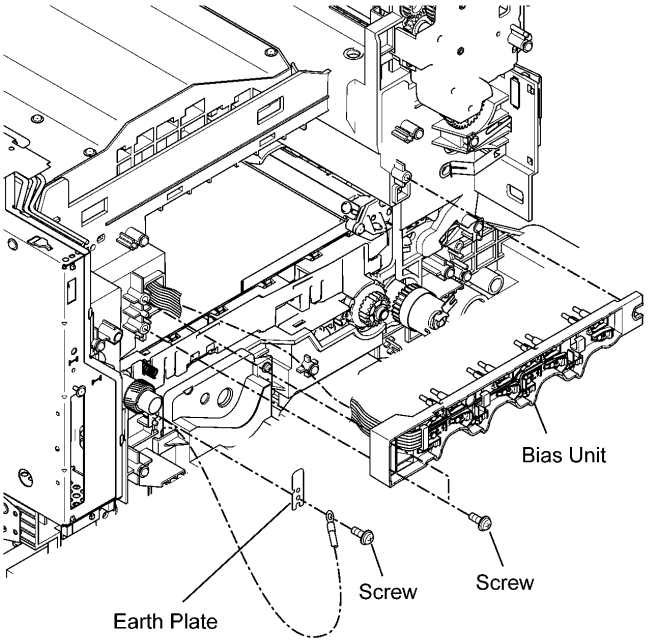
Before performing the following steps, remove the toner cartridge holder, toner cartridge drive unit, paper cassette drive motor bracket, engine control board, sub fuser fan and main drive unit.

(1) Disconnect the connectors CN2 and 3 on the high voltage board (see section 8.14 “High Voltage Board and Reg. Thermistor Senser”).

(2) Remove the 1 screw from the earth plate.

(3) Remove the 2 screws.

(4) Remove the bias unit from the chassis.



8.7.7. Power Supply Fan Motor and PSU Fan Motor Duct

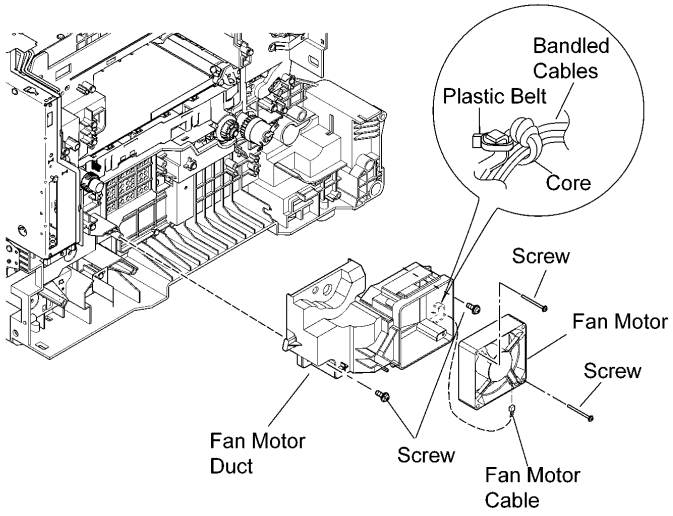
Before performing the following steps, remove the toner cartridge holder, toner cartridge drive unit, paper cassette drive motor bracket, engine control board, sub fuser fan and main drive unit.

(1) Disconnect the fan motor cable from the fan motor.

(2) Remove the fan motor (2 screws).

(3) Remove the fan motor duct (2 screws).

(4) If necessary, cut the plastic belt and separate the bundled cable with the core from the fan motor duct.



8.8. LSU (Laser Scanning Unit)

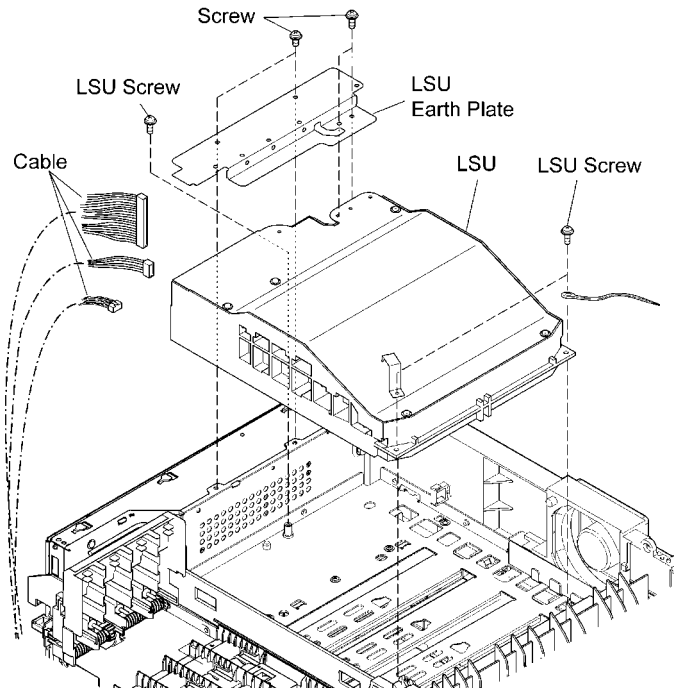
Before performing the following steps, remove the left, top and rear covers (see section 8.5 “Rear, Left and Top Covers”).

(1) Remove the LSU earth plate (4 screws).

(2) Remove the 3 LSU screws from the LSU.

(3) Separate the LSU from the printer.

(4) Disconnect the 3 connectors from the LSU.



8.9. Paper Exit

Before performing the following steps, remove the parts that are listed below:

1. all covers (see sections 8.3, 8.4 and 8.5)

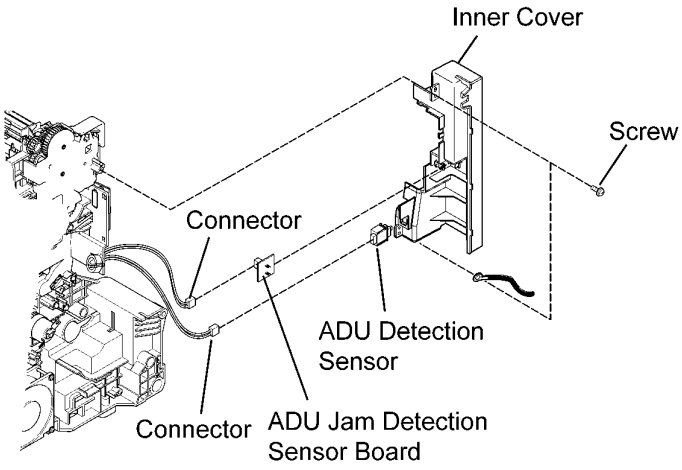
2. Paper Pickup Motor Bracket (see section 8.7.4 “Paper Pickup Motor and Motor Bracket”)

(1) Remove the 2 screws.

(2) Disconnect the 2 connectors.

(3) Remove the inner cover.

(4) If necessary, remove the ADU (Automatic Duplex Unit) detection sensor and ADU jam detection sensor board from the inner cover.



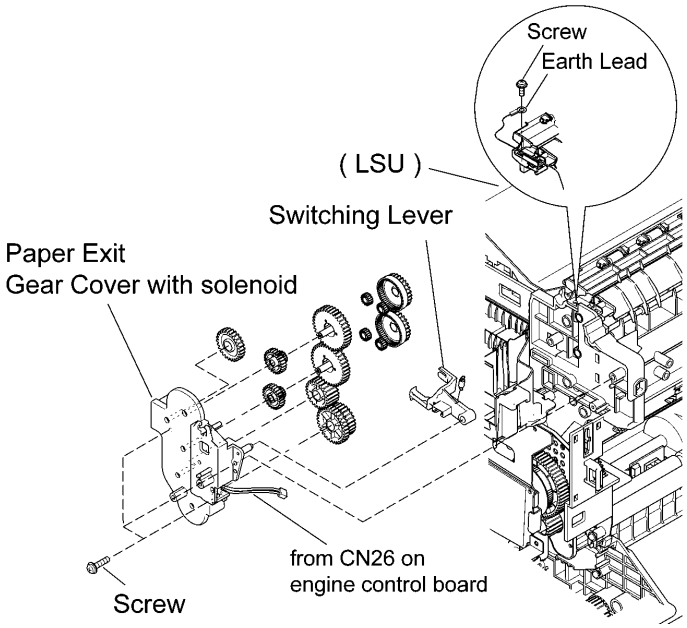
(5) Remove 3 screws from the paper exit gear cover and 1 screw from the earth lead terminal.

(6) Disconnect the connector CN26 on the engine board (see section 8.7.1 “Engine Control and Temperature/Humidity Sensor Boards “.

(7) Remove the paper exit gear cover, gears and switching lever from the chassis.

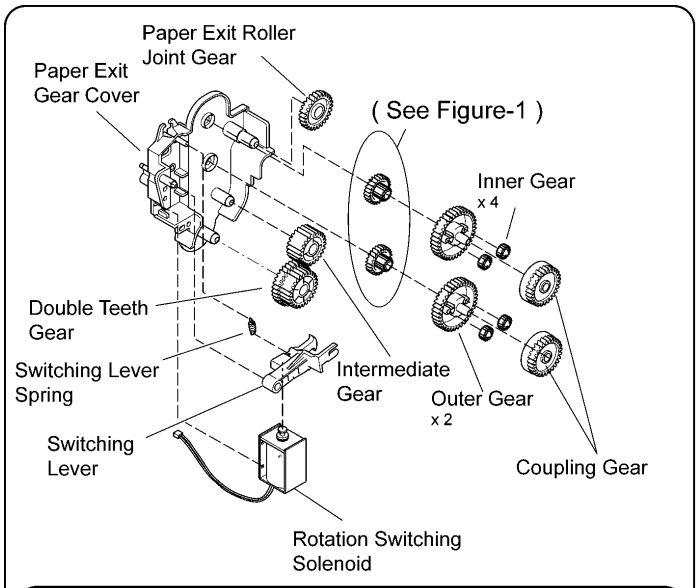
Note:

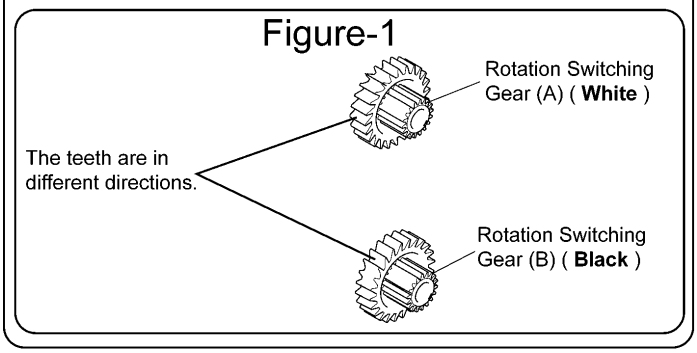
When reinstalling the gears on the paper exit gear cover, see the following figure.



Caution:

The rotation switching gear (A) differs from the gear (B) in the gears teeth shape. For reinstalling these gears properly, see the following Figure-1.

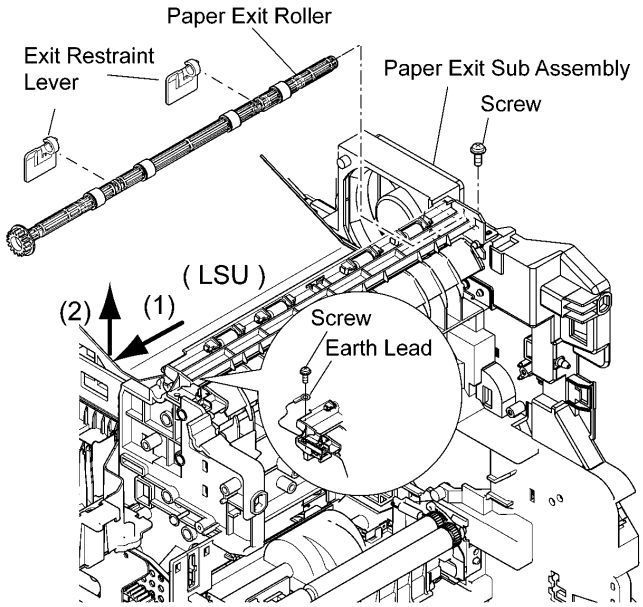




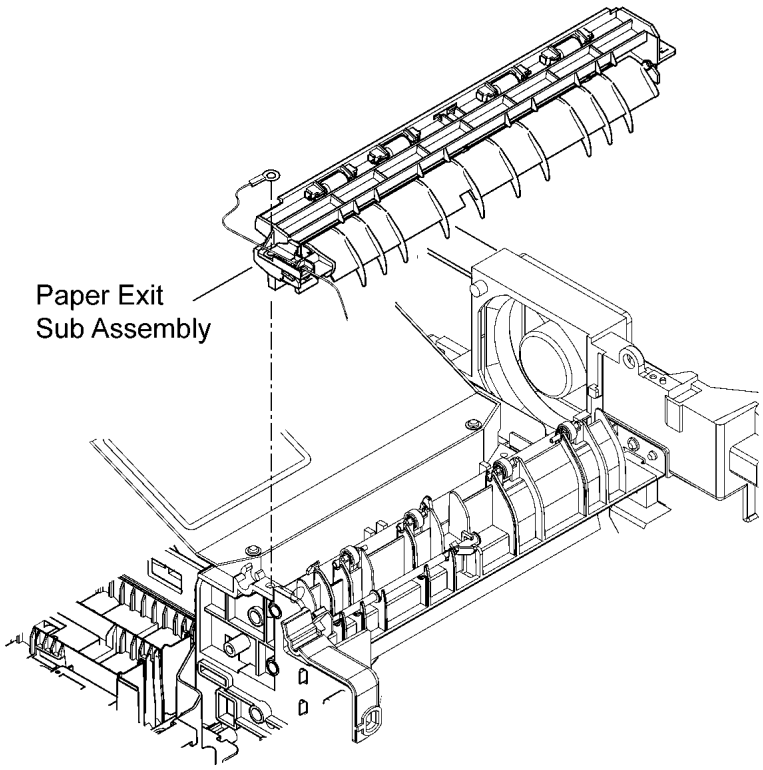
(8) If the earth lead and screw are installed, remove the screw to free the earth lead from the printer chassis.

(9) Remove a screw from the paper exit sub assembly.

(10) Remove the paper exit roller and exit restraint levers by moving it in the direction of arrow [(1), (2)].



(11) Remove the paper exit sub assembly.

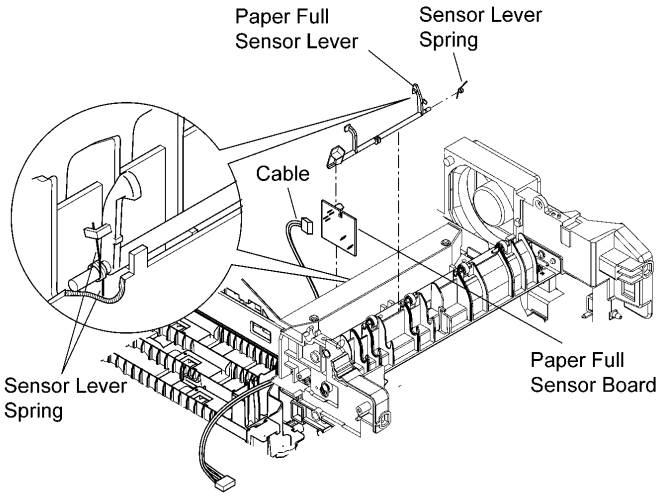


(12) Remove the paper full sensor and sensor lever spring.

(13) Remove the paper Full sensor board.

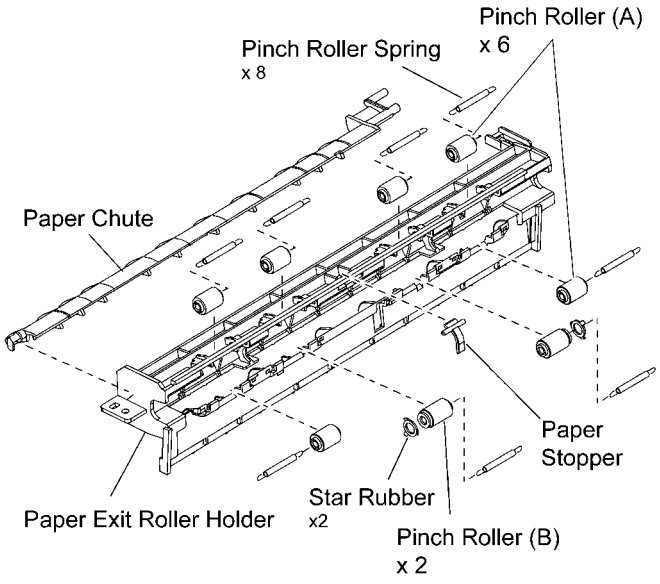
(14) Disconnect the cable from the sensor board.

(15) If necessary, disconnect the connector CN17 on the engine control board.



8.9.1. Disassembly of Paper Exit Sub Assembly

(1) The pinch rollers (A), pinch rollers (B), pinch roller springs. etc., can be removed from the paper exit roller holder.



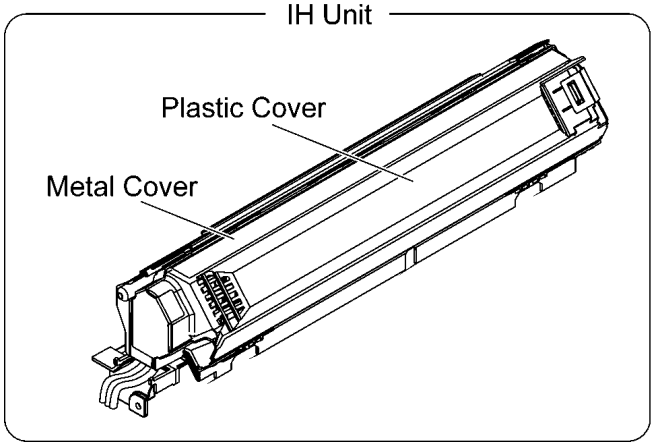
8.10. IH (Inductive Heater) Unit

Before performing the following steps, remove all covers and fuser unit.

Caution: Handling of the IH Unit

When turning on the IH unit, the current (approx. 12 Arms: 100V AC Power) flows in the IH unit. For safety, observe the following:

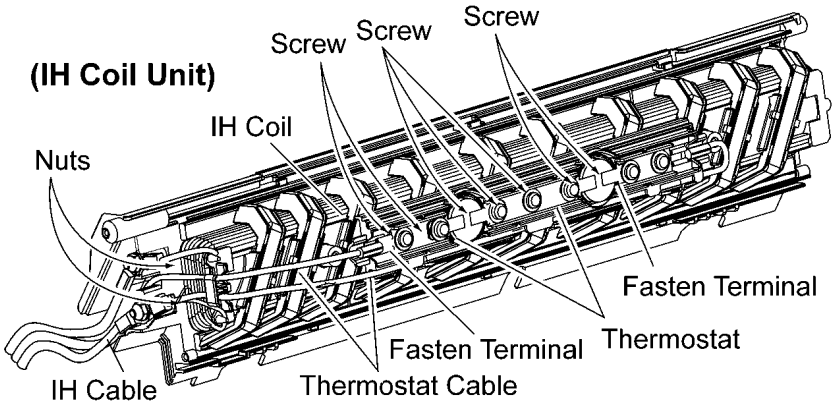
If not necessary, don't remove the plastic and metal covers from the IH unit.



Don't loosen or remove any component (nuts, screws, fasten terminals, etc.) from the IH coil unit.

The current (approx. 12 Arms: 100V AC Power) flows in the IH coil unit. The following nuts and screws connect the IH cable to the IH coil & thermostat cable. The thermostat cables are connected to the thermostats by the screws or the fasten terminals. **For protection from smoke, fire and other hazards, don't loosen (or remove) any component (nuts, screws, fasten terminals, etc.) on (from) the IH coil unit**.

Nuts and Screws :
Don't loosen or remove any component (nuts, screws, fasten terminals, etc.) on (from) the IH coil unit.



The IH cable is connected to the IH coil and thermostats by the nuts, screws and fasten terminals. When the IH unit is turned on, the current (approx. 12 Arms : 100V AC Power) is supplied to the IH coil and thermostats through the IH cable & thermostat cables. If loose (or removed) these nuts, screws and fasten terminals, the contact resistances at these connections increases. This will generate dangerous intense heat at these connections when turning on the IH unit. As a result, the IH unit (or printer) may emit smoke or can cause a fire at the worst. Don't remove or loosen any component from (on) the IH coil unit. If removing or loosening is done, replace it with a new IH unit for servicing or repairing.

(1) Remove the interlock switch cover (3 screws).

(2) Remove the IH cable shield cover while unlatching the hook from the printer chassis using a flat-blade screw driver (1 screw and 1 hook) (see figure-1).

(3) Remove the protect cover while pushing softly on the hook using a small pin and moving it in the arrow direction (1 screw and 1 hook) (see figure-2).

(4) Disconnect 2 connectors from the IH power supply board.

Note:

When rewiring the IH cable, the part with the white color mark of the IH cable must be positioned between the projections (A) and (B) as shown in the figure-3.

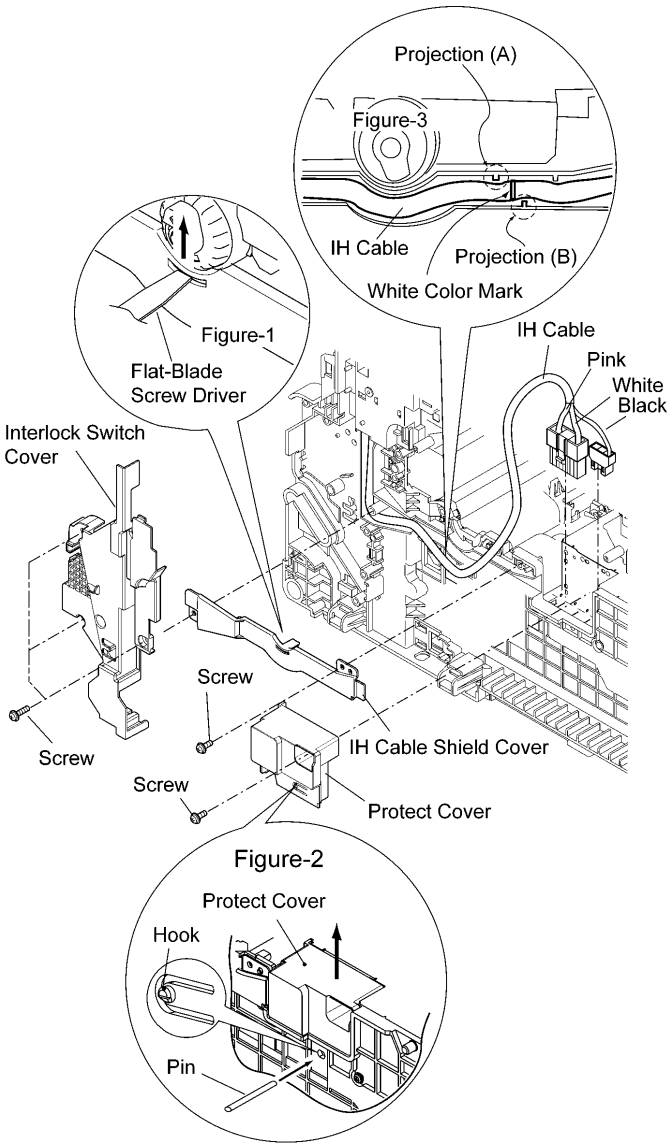


Figure-2

(5) Remove the IH harness cover (1 screw).

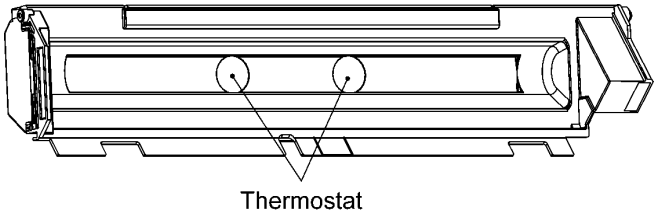
(6) Remove the IH unit (1 screw and 1 washer) while pulling out the IH harness cable through the opening.

Note:

The IH unit is engaged with the chassis frame by the projection. When removing the IH unit from the chassis, slide the IH unit in the arrow direction.

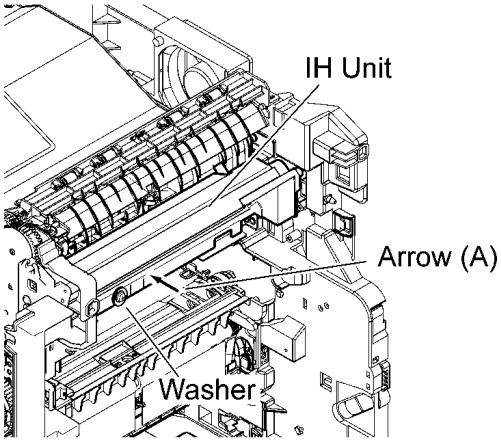
Caution 1:

When handling the IH unit, do not push or damage the surface of the thermostat, or the thermostat may not operate properly.

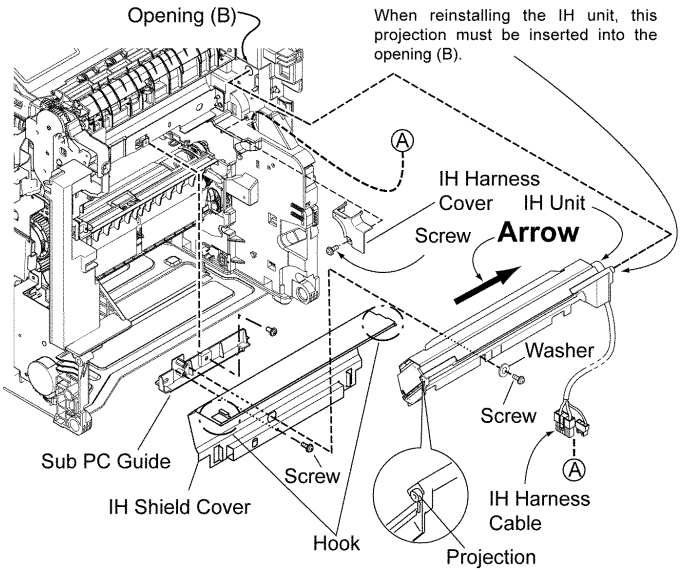


Caution 2:

When rewiring the IH cable or reinstalling the IH unit, make sure that the IH unit moves smoothly inside [Arrow (A) direction in the following figure].



(7) Remove the IH shield cover while releasing the 2 hooks from the chassis (1 screw).



8.11. Paper Feed Unit

Before performing the following steps, remove the rear cover, left cover and front door.

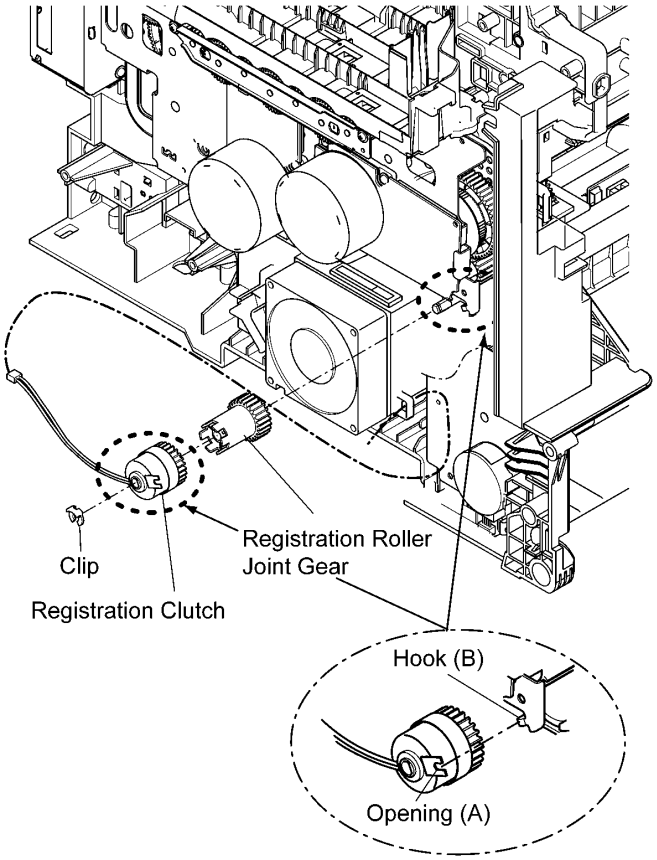
(1) Remove the clip.

(2) Slide out the registration clutch and registration roller joint gear.

Note:

When reinstalling the registration clutch, opening (A) of registration clutch must be aligned with hook (B).

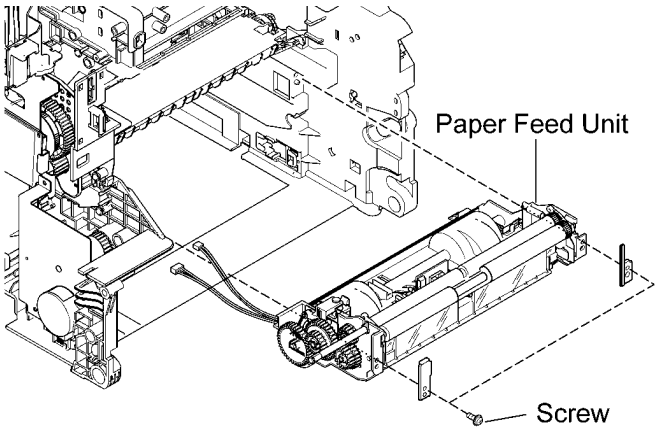
(3) If necessary, disconnect the connector CN20 on the engine board (see section 8.7.1 “Engine Control and Temperature/Humidity Sensor Boards”).



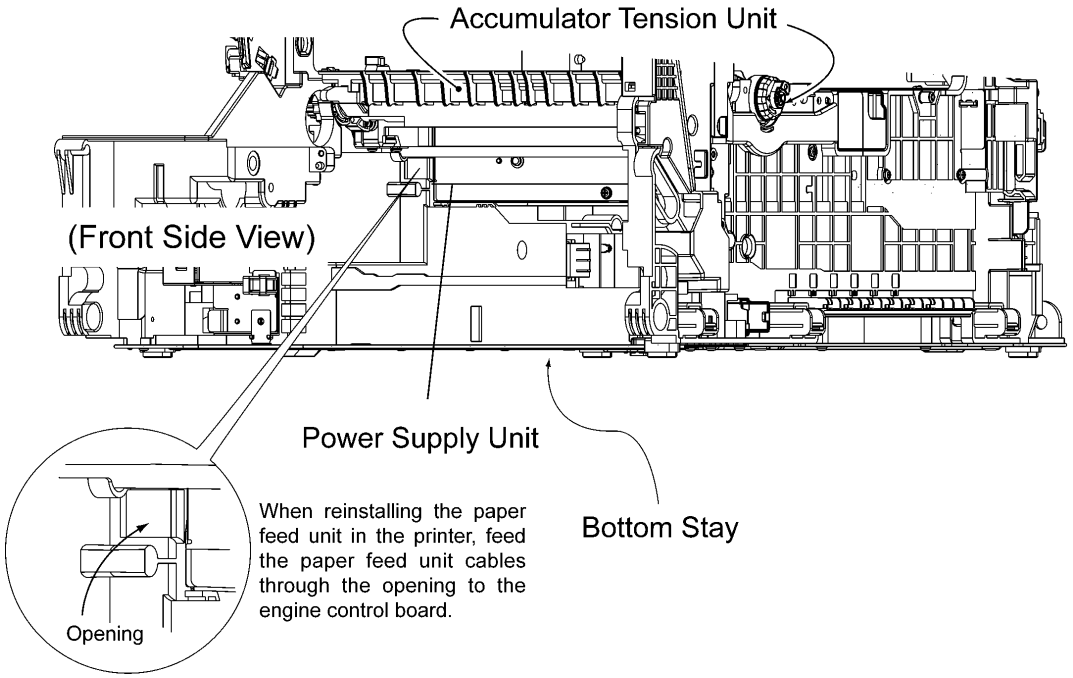
(4) Remove the 2 screws.

(5) Disconnect the connectors CN18 and CN19 on the engine board (see section 8.7.1 “Engine Control and Temperature/Humidity Sensor Boards”).

(6) Remove the paper feed unit while pulling out the cable through the opening of chassis.



Note: Wiring of Paper Feed Unit Cable


Accumulator Tension Unit
(Front Side View)
Power Supply Unit
Bottom Stay
When reinstalling the paper feed unit in the printer, feed the paper feed unit cables through the opening to the engine control board.
Opening

8.11.1. Paper Feed Unit Disassembly

(1) Remove the pickup gear and inner gear (B) while unlatching the gear hook.

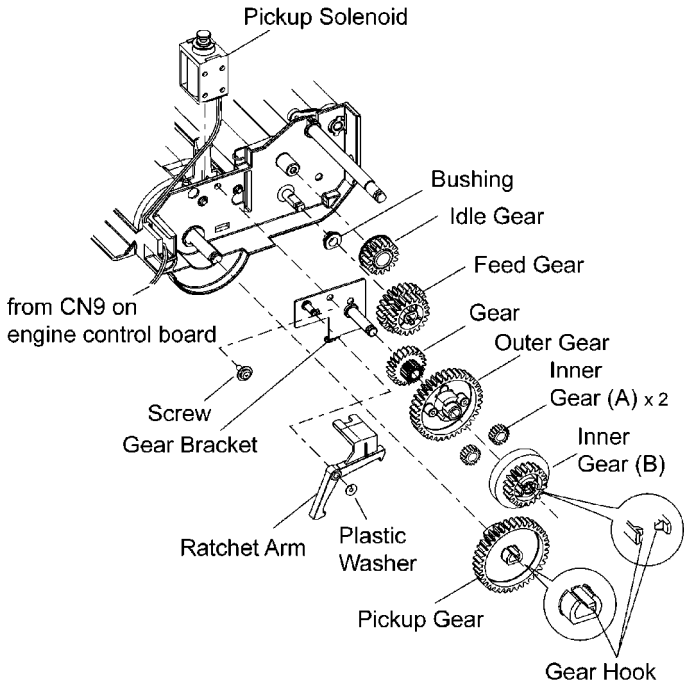
(2) The inner gear (A), outer gear and gear can be removed.

(3) Remove the plastic washer and ratchet arm from the gear bracket.

(4) Remove the feed gear, idle gear and bushing.

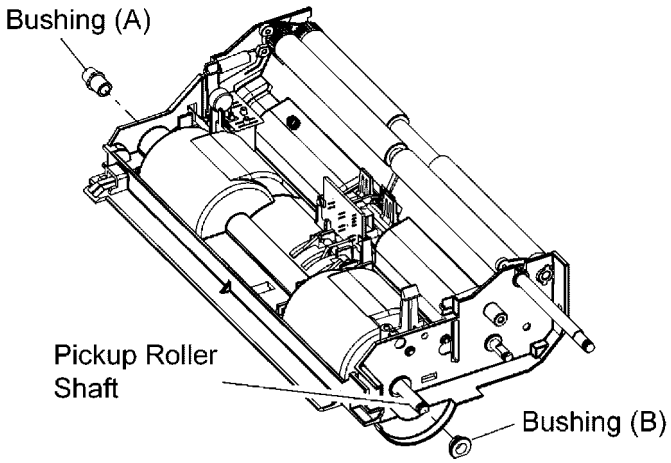
(5) Remove the screw and gear bracket.

(6) Remove the pickup solenoid.



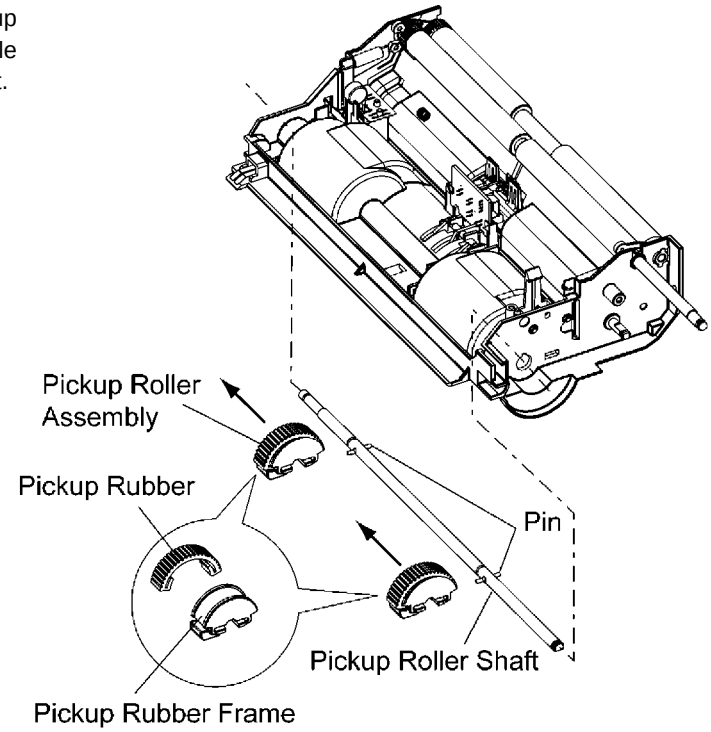
(7) Remove the bushing (B) from the pickup roller shaft.

(8) Remove the bushing (A) while unlatching the bushing hook from the pickup roller shaft.



(9) Remove the 2 pickup roller assemblies from the pickup roller shaft by sliding it in the arrow direction while unlatching the hook from the groove of pickup roller shaft.

(10) Remove the pickup roller shaft with the 2 pins.



(11) Remove the 2 springs from the paper feed unit frame.

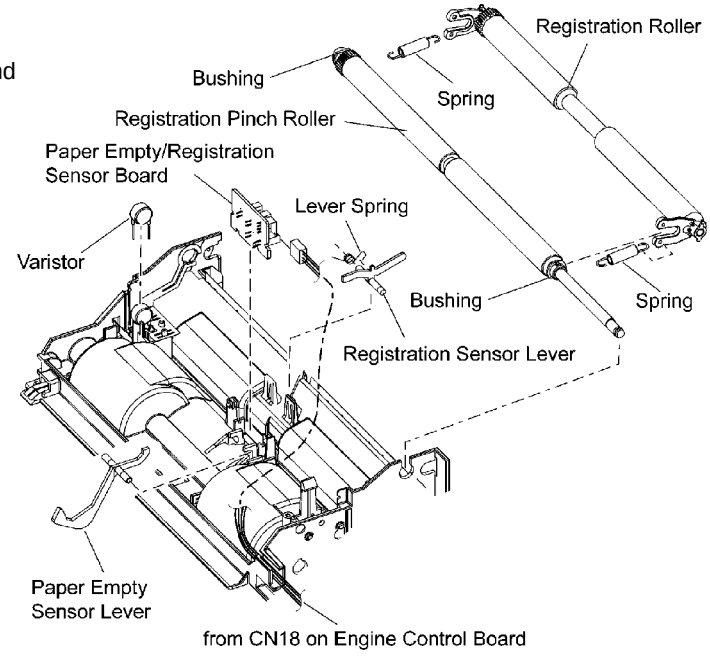
(12) Remove the registration roller, registration pinch roller and 2 bushings.

(13) Remove the paper empty/registration sensor board.

(14) Remove the registration sensor lever and lever spring.

(15) Remove the paper empty sensor lever.

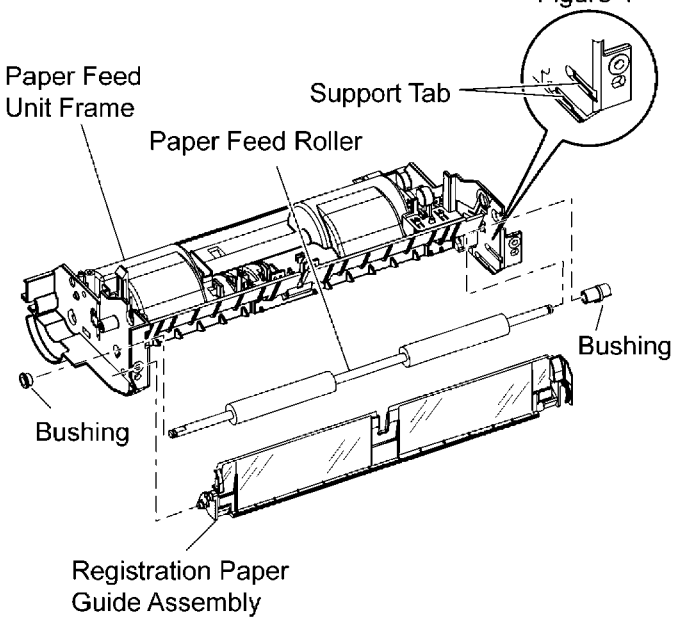
(16) If necessary, remove the varistor.



(17) The registration paper guide assembly is held in place by the 2 support tabs (see Figure-1). While unlatching the registration paper guide assembly from the support tabs, remove it from the paper feed unit frame.

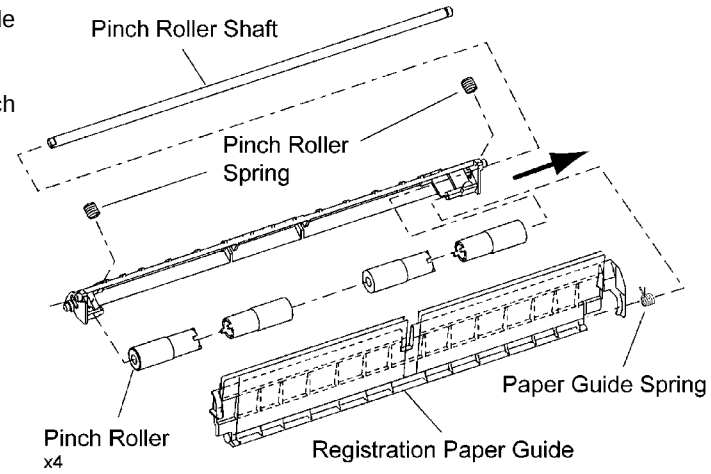
(18) Remove the 2 bushings from both end of paper feed roller, then paper feed roller from the paper feed unit frame.

Figure-1



(19) Remove the registration paper guide and paper guide spring from the registration paper guide assembly.

(20) After removing the 2 pinch roller spring, slide out the pinch roller shaft in the arrow direction.



8.12. Power Supply Unit (Power Supply Board and IH Power Board)

Before performing the following steps, remove the rear cover, right cover, left cover, top cover and accumulator unit.

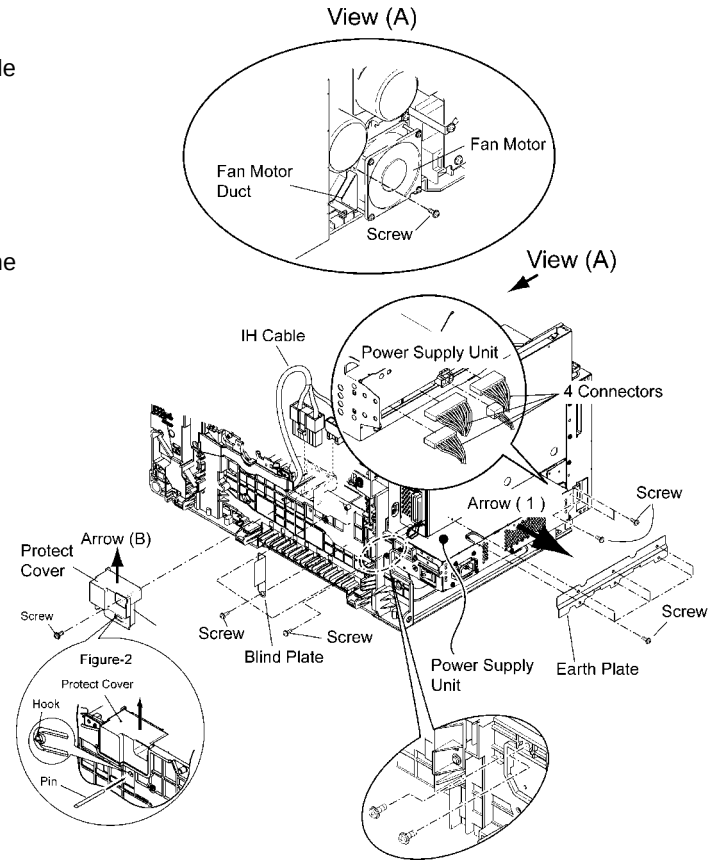
(1) Remove the screw from the protect cover.

(2) Slide out the protect cover in the Arrow (B) direction while pushing softly the hook using a small pin.

(3) Disconnect the IH cable from the power supply board.

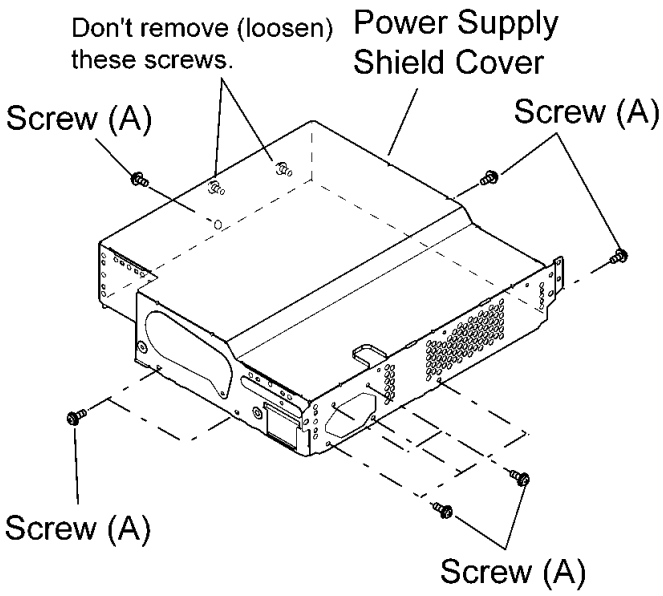
(4) Remove the 13 screws and earth plate.

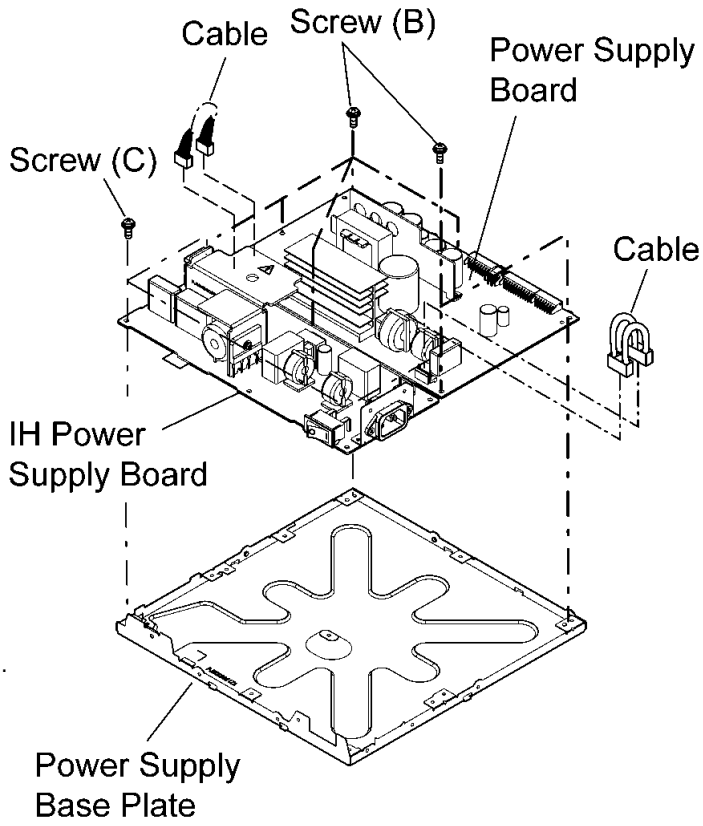
(5) Slide out in the arrow (1) direction while disconnecting the 4 connectors.



8.12.1. Power Supply Unit Disassembly

(1) Separate the power supply shield cover from the power supply base plate (10 screws).





(2) Disconnect the 2 cables.

(3) Remove 7 screws (B).

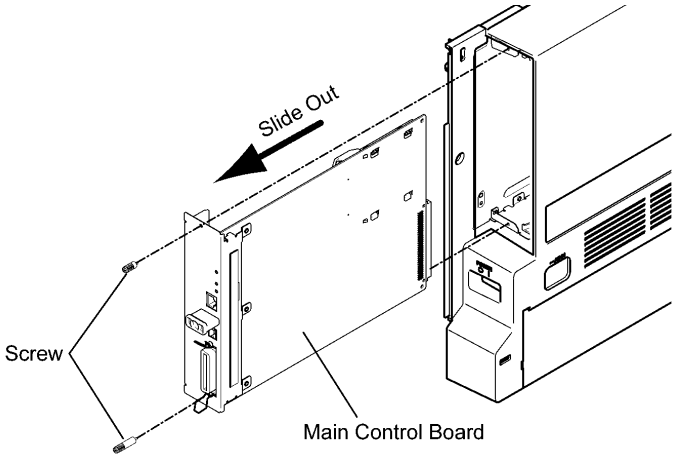
(4) Remove the power supply board.

(5) Remove the 5 screws (C), then the IH power supply board.

8.13. Main Control Board

(1) Remove the 2 screws.

(2) Slide out the main control board with the ROM board.



8.13.1. Main Control Board Shield Covers

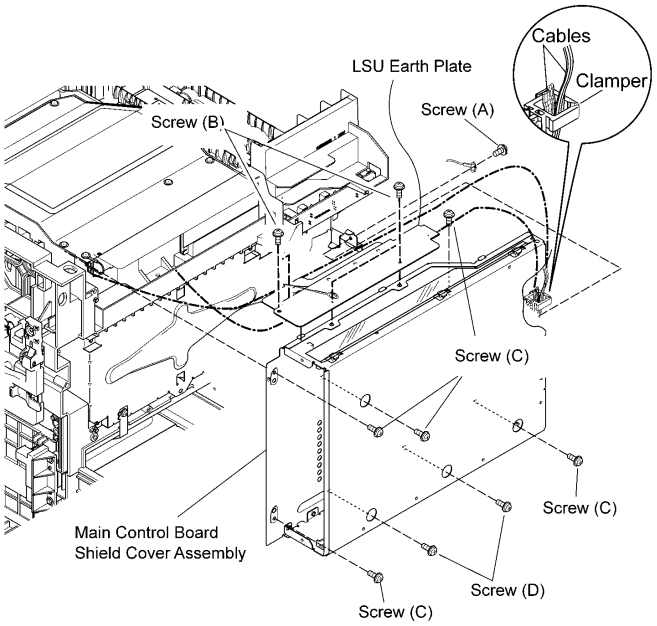
Before performing the following steps, remove all covers, power supply unit and engine board shield cover.

(1) Remove the screw (A).

(2) Remove the 4 screws (B).

(3) Remove the LSU earth plate.

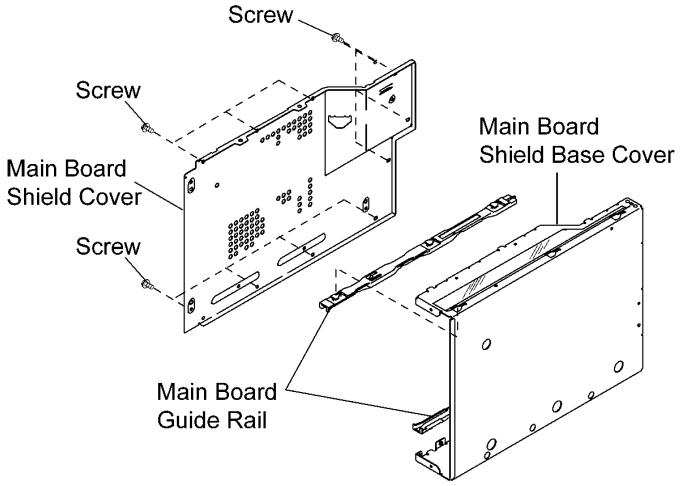
(4) Remove the 5 screws (C), 2 screw (D) and release the cables from the clamper, then remove the main control board shield cover assembly.



(5) Remove the 10 screws.

(6) Separate the main board shield cover from the main board shield base cover.

(7) Remove the main board guide rail from the main board shield base cover.



8.14. High Voltage Board and Reg. Thermistor Sensor

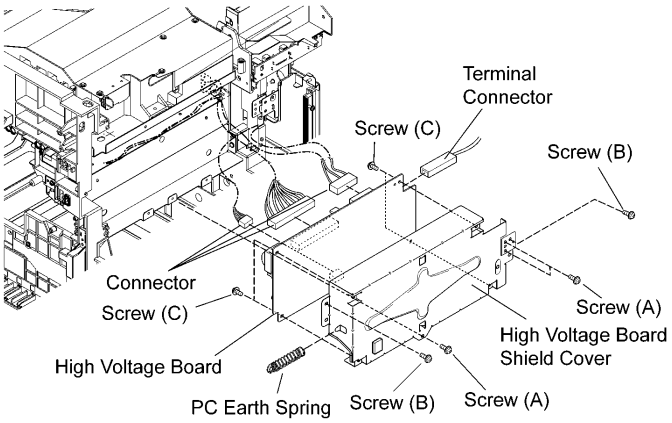
Before performing the following steps, remove all covers, power supply unit, main control shield cover assembly and engine board shield cover.

(1) Remove the 2 screws (A) and 3 screws (B).

(2) Separate the PC earth spring and high voltage unit (consists of high voltage board, high voltage board shield cover, etc.) from the chassis.

(3) Disconnect the 4 connectors.

(4) Separate the high voltage board from the high voltage board shield cover (4 screws (C)).



8.15. Accumulator Tension Unit

Before performing the following steps, remove rear cover, left cover, top cover, black print cartridge, color print cartridge and Acc unit.

(1) Open the right cover.

(2) Open the print cartridge holder.

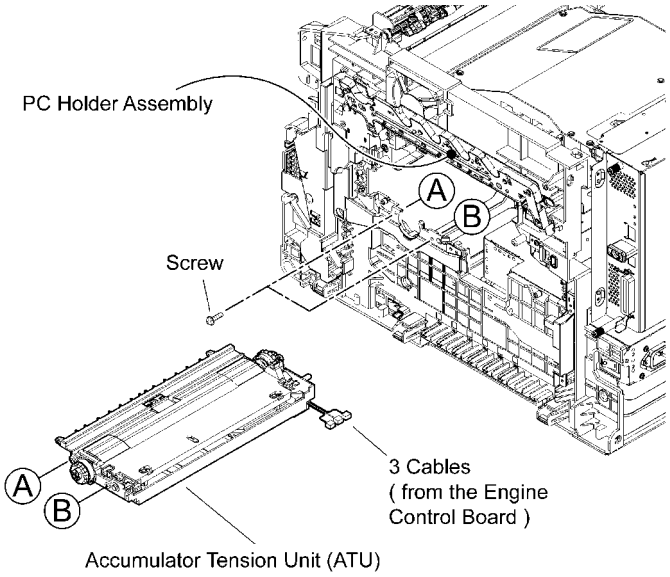
(3) Remove the 2 screws.

(4) Disconnect the connectors CN14, 24 and 25 on the engine control board (see section 8.7.1 “Engine Control and Temperature/Humidity Sensor Boards”.).

(5) Remove the accumulator tension.

Note:

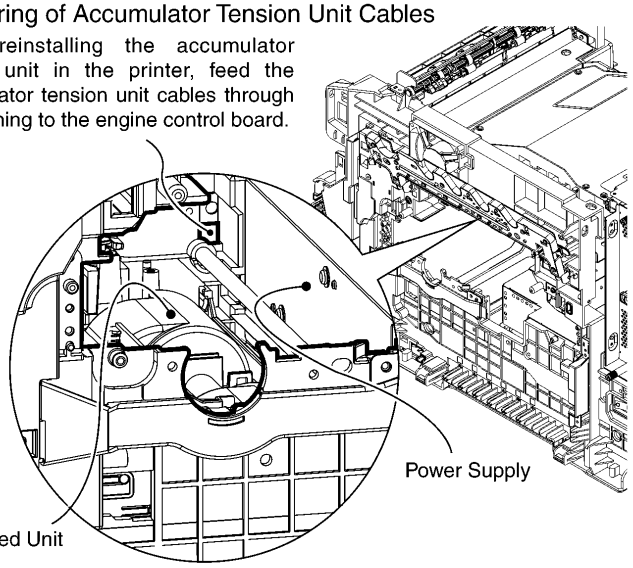
The accumulator cables are wired through the opening of the chassis and connected to the 3 connectors CN14, 24 and 25 on the engine control board. Remove the accumulator tension unit, using care that the cables are not damaged.



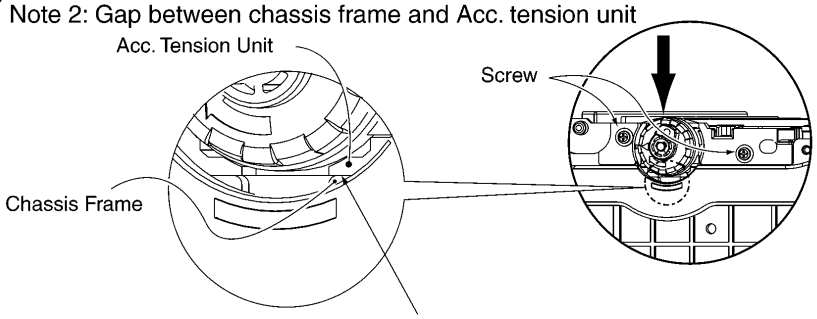
Notice for reinstalling Acc. Tension Unit

Note 1: Wiring of Accumulator Tension Unit Cables

When reinstalling the accumulator tension unit in the printer, feed the accumulator tension unit cables through this opening to the engine control board.



Note 2: Gap between chassis frame and Acc. tension unit

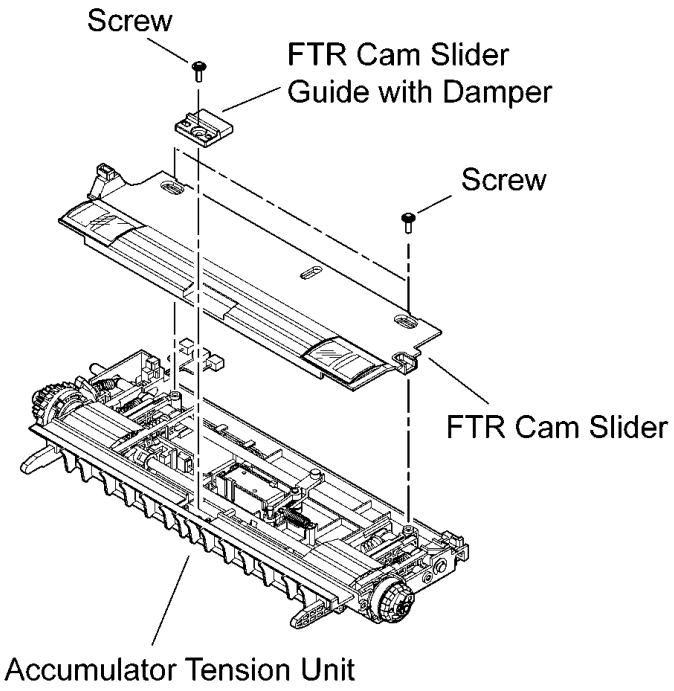


A gap between the chassis frame and Acc. tension unit must be "0" to prevent damage to the Acc. tension unit base in the Acc. tension unit. Tighten the screws while pushing the Acc. tension unit in the arrow direction after reinstalling the Acc. tension unit, then make sure that there is no gap between the Acc. tension unit and chassis frame.

8.15.1. Accumulator Tension Unit Disassembly

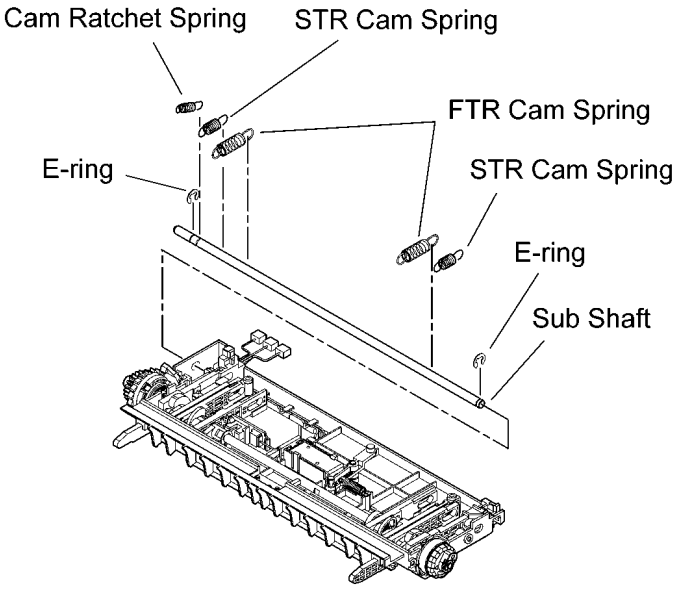
(1) Remove the FTR cam slider guide with damper (1 screw).

(2) Remove the FTR cam slider (2 screws)



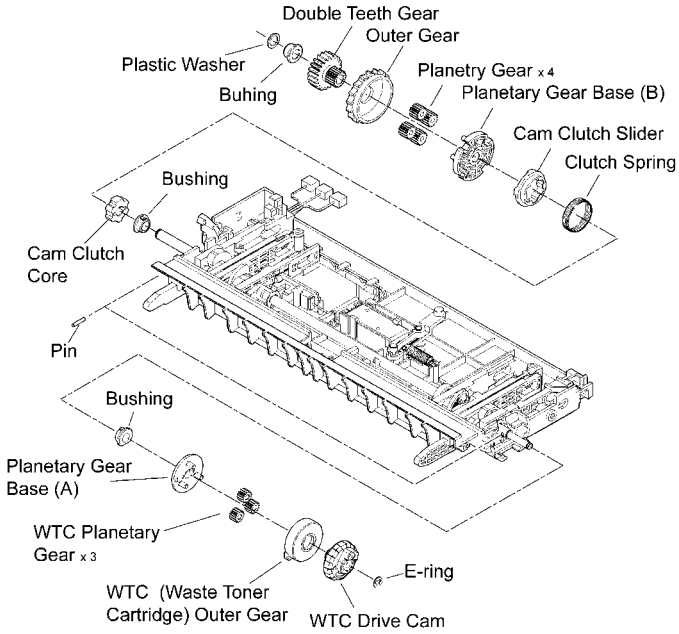
(3) Remove the 5 springs.

(4) Remove the 2 E-rings from both end of the sub shaft, and slide out the sub shaft.

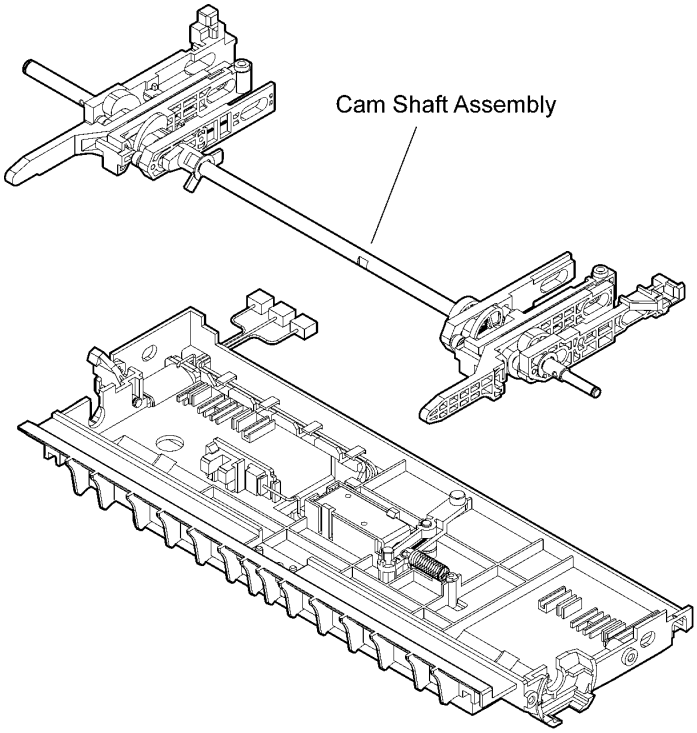


(5) Remove the plastic washer and E-ring from both end of the cam shaft.

(6) The WTC Drive Cam, WTC Outer Gear, WTC Planetary Gear, etc., can be removed from the cam shaft.



(7) Remove the cam shaft assembly.



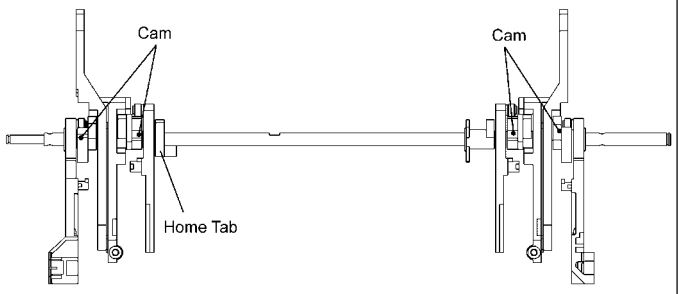
(8) Remove the 2 E-rings from both ends of cam shaft.

(9) The FTR (First Transfer Roller) Cam (R), FTR Cam Link (R), etc., can be removed from the cam shaft.

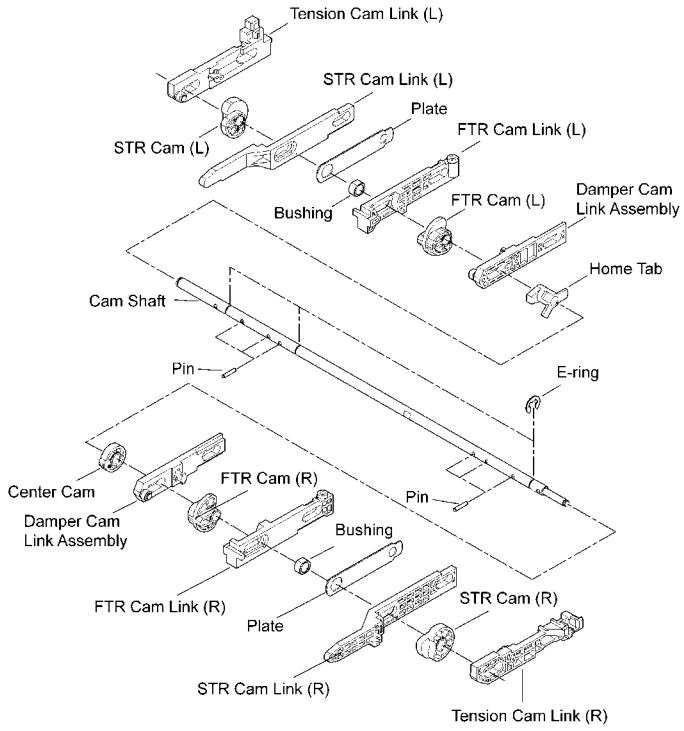
Caution:

When reassembling the cam shaft, the 4 cams and home tab must be aligned as shown below (Figure-2).

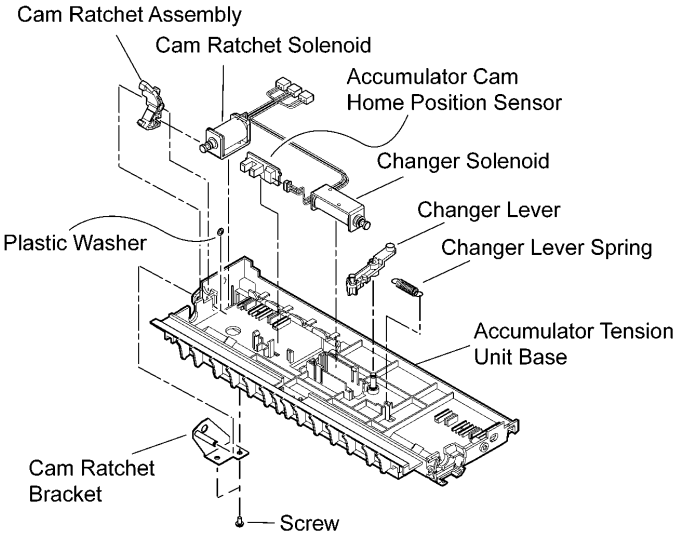
(Figure-2)



When reassembling the cam shaft, the 4 cams and home tab must be aligned as shown above.



(10) The changer solenoid, changer lever, changer solenoid spring, etc., can be removed from the accumulator tension unit base easily.

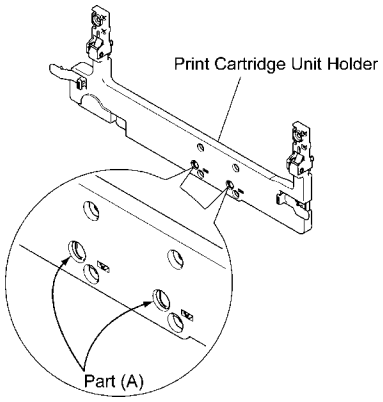


8.16. Print Cartridge Unit Holder

Before performing the following steps, remove rear cover, left and top covers.

When handling and servicing the Print Cartridge Unit Holder

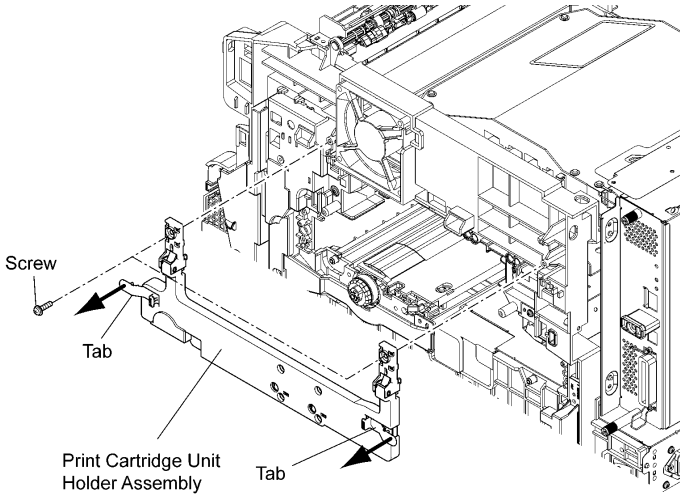
- Do not handle part (A), or poor print quality will occur.
- Do not loosen or remove any screws on the print cartridge unit holder, or poor print quality may occur.
- When exchanging the print cartridge unit holder with a new part, a skew adjustment is needed. Refer to section 11.3 “Skew Adjustment”.



(1) Open the right cover.

(2) Release the 2 tabs by moving it in the arrow direction.

(3) Remove the 2 screws and print cartridge unit holder assembly.



8.17. Fuser Fan Motor

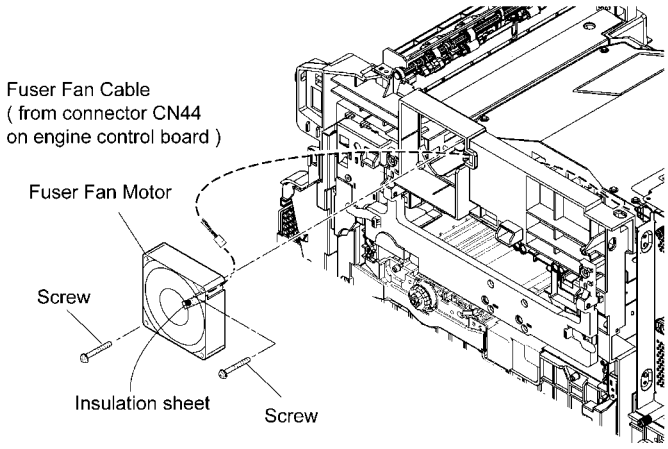
Before performing the following steps, remove rear, left and top covers.

(1) Open the right cover.

(2) Remove the screw and fuser fan motor from the chassis.

(3) Remove the insulation sheet and then disconnect the fan cable from the fan motor.

(4) Disconnect the connector CN44 on the engine control board (see section 8.7.1 “Engine Control and Temperature/Humidity Sensor Boards”) and remove the fuser fan cable from the chassis.



8.18. Front Door Open Detection and Right Cover Open Detection Switches

Before performing the following steps, remove the rear cover, right cover, top cover and front door.

(1) Remove the 3 interlock cover screws and interlock cover.

(2) Disconnect the cable (A), and remove the front door open detection sensor.

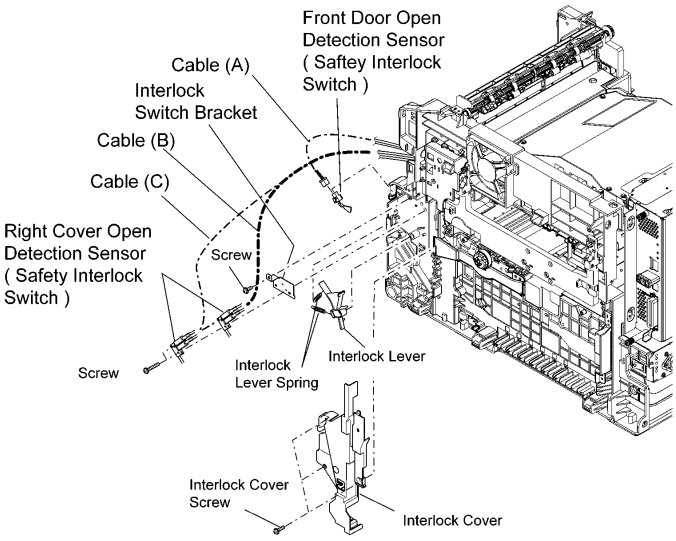
(3) If necessary, the cable (A) connector CN7 on the engine control board (see section 8.7.1 “Engine Control and Temperature/Humidity Sensor Boards”).

(4) Disconnect the cable (B) from the power supply unit [see section 8.12 “Power Supply Unit (Power Supply Board and IH Power Board)].

(5) Disconnect the cable (C) connector CN35 on the engine control board (see section 8.7.1 “Engine Control and Temperature/Humidity Sensor Boards”).

(6) Remove the 2 screws and safety interlock switches from the interlock switch bracket.

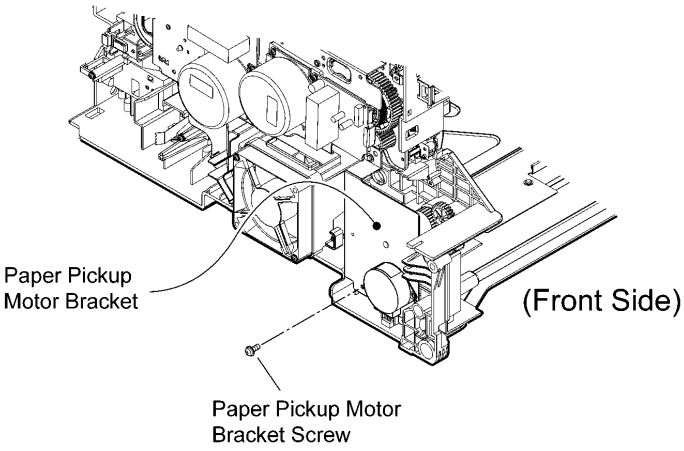
(7) Remove the screw and interlock switch bracket.



8.19. MPT (Multipurpose Print Tray) Home Position Sensor and MPT Paper Detection Sensor Boards

Before performing the following steps, remove the left, top cover and rear covers.

(1) Remove the paper pickup motor bracket screw.

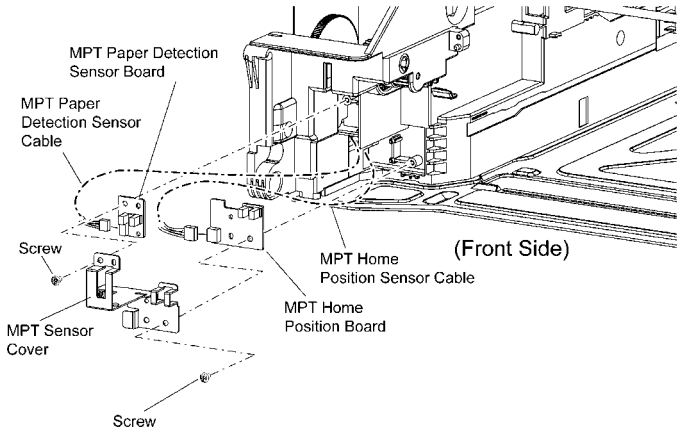


(2) Remove the 2 screws from MPT sensor cover.

(3) Remove the MPT sensor cover.

(4) Remove the MPT home position sensor and MPT paper detection sensor boards.

(5) Disconnect the MPT home position sensor and MPT paper detection sensor cables.



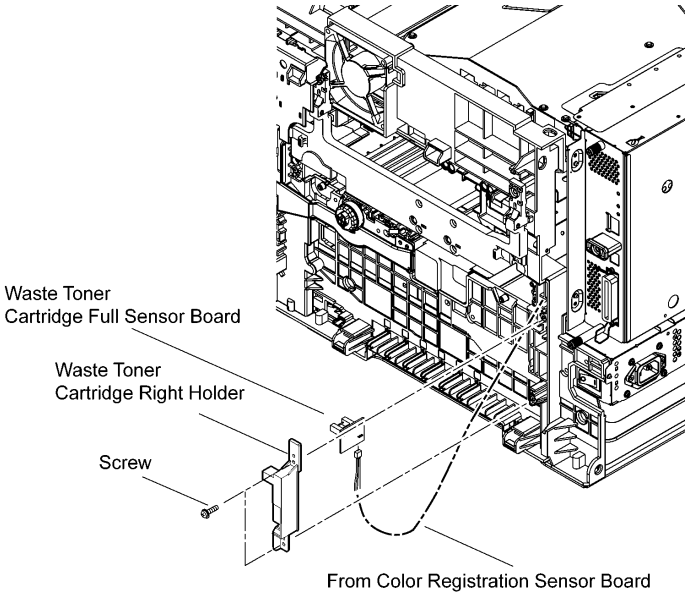
8.20. Waste Toner Cartridge Full Sensor

(1) Open the right cover.

(2) If the waste toner cartridge is installed, remove it.

(3) Remove the 2 screws and waste toner cartridge right holder.

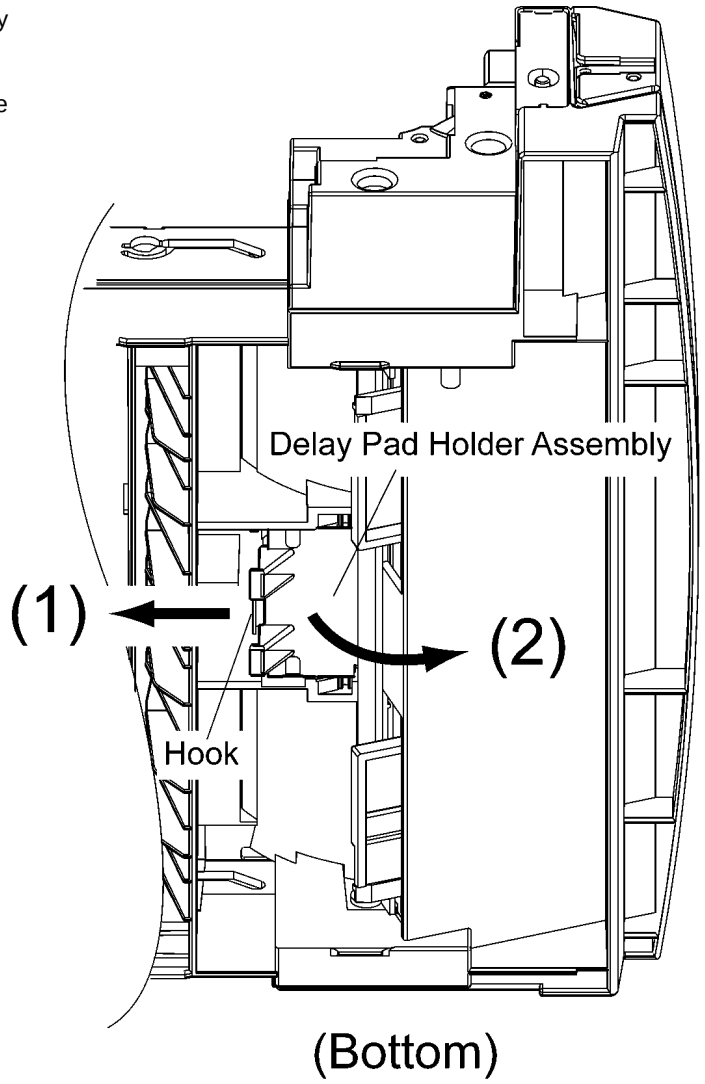
(4) Disconnect the cable from the waste toner cartridge full sensor board.



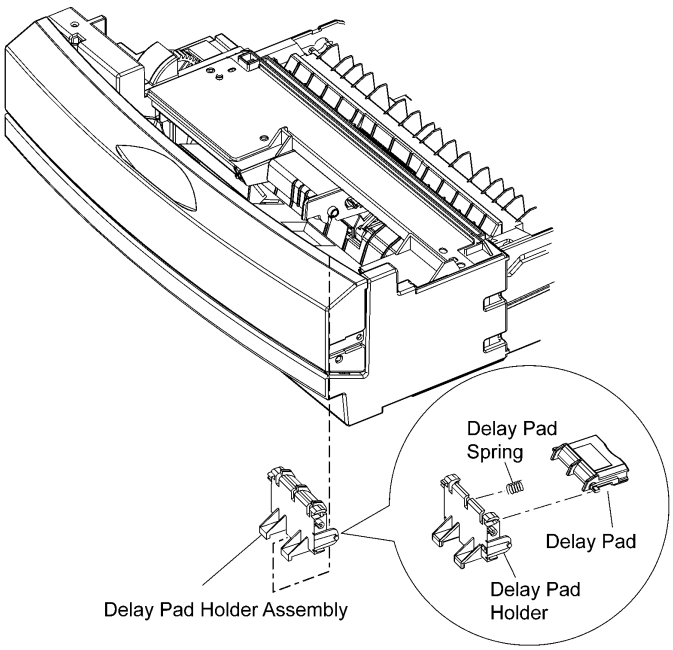
8.21. Standard Paper Cassette

(1) Unlatch the hook from the delay pad holder assembly by moving it in the arrow (1) direction.

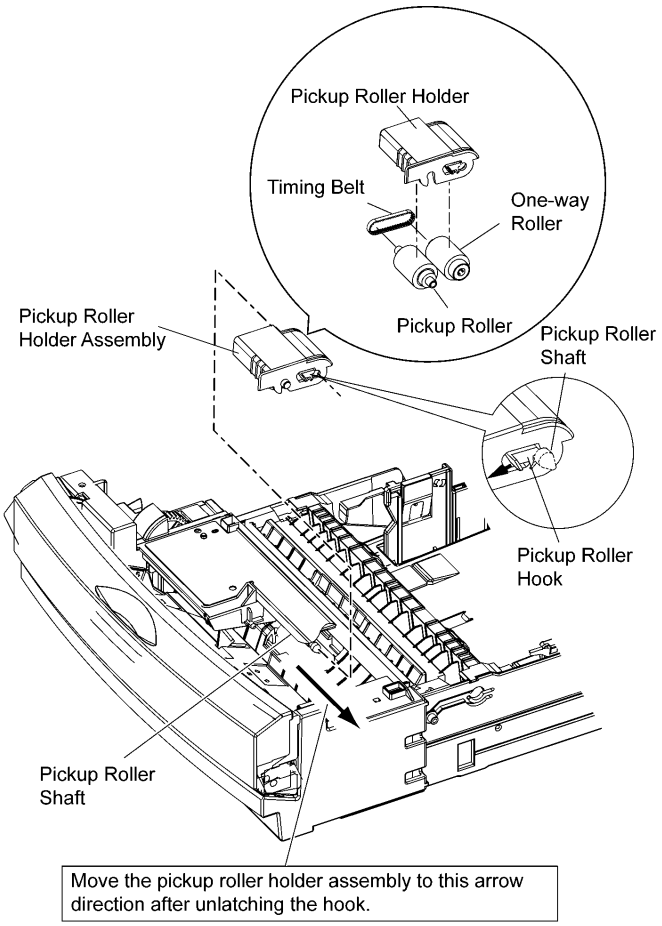
(2) Remove the delay pad holder assembly by turning it in the arrow (2) direction.



(3) Remove the delay pad holder assembly from the cassette.



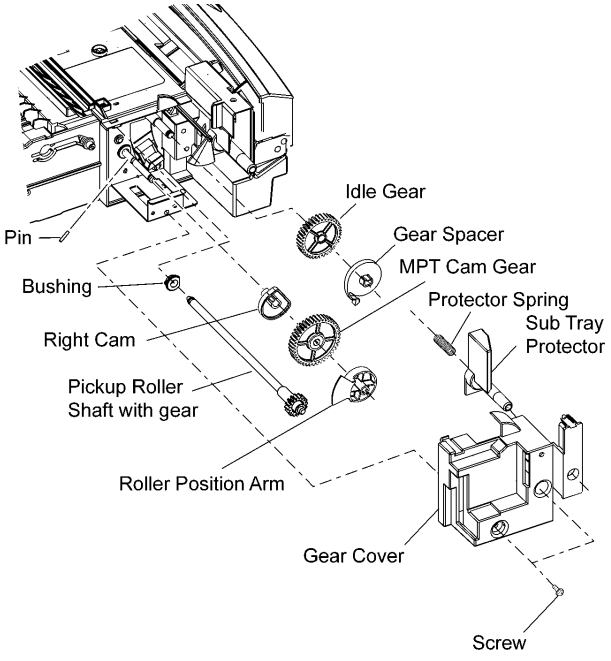
(4) Slide out the pickup roller holder assembly from the pickup roller shaft while unlatching the pickup roller hook from the pickup roller shaft.


Pickup Roller Holder
Timing Belt
One-way Roller
Pickup Roller
Pickup Roller Holder Assembly
Pickup Roller Shaft
Pickup Roller Hook
Pickup Roller Shaft
Move the pickup roller holder assembly to this arrow direction after unlatching the hook.

(5) Remove the gear cover (2 screws), sub tray protector and protector spring.

(6) Remove the gear spacer, idle gear, roller position arm, MPT cam gear, right cam and pin.

(7) Remove the pickup roller shaft with gear and bushing.



(8) Remove the MPT upper plate (3 screws).

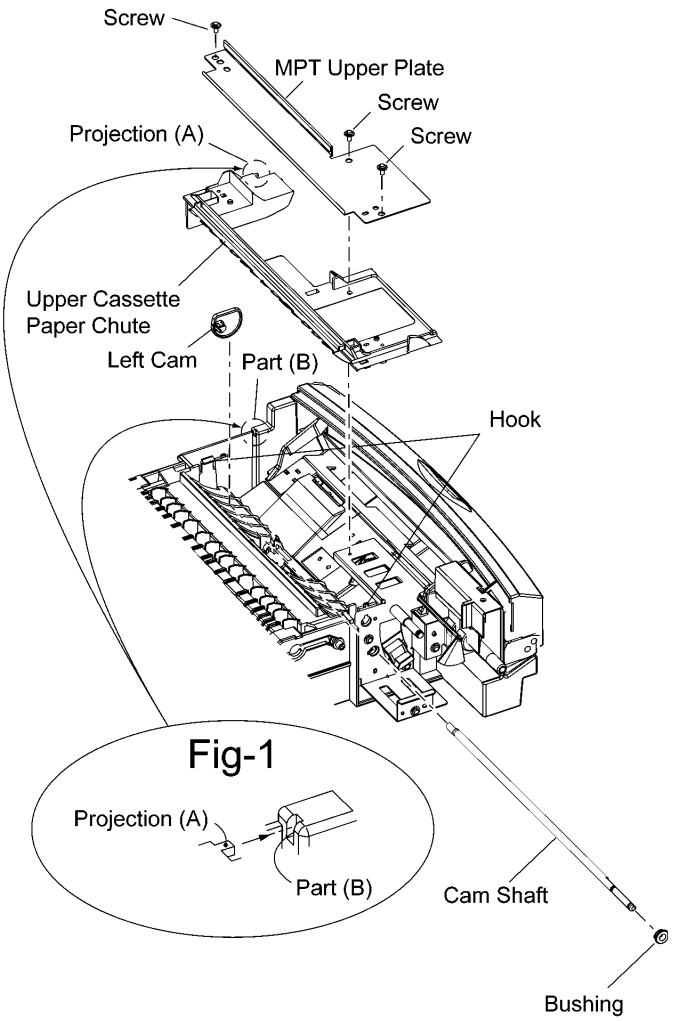
(9) Remove the upper cassette paper chute while unlatching the 2 hooks.

(10) Remove the left cam while unlatching the hook from the cam shaft.

(11) Remove the cam shaft and bushing.

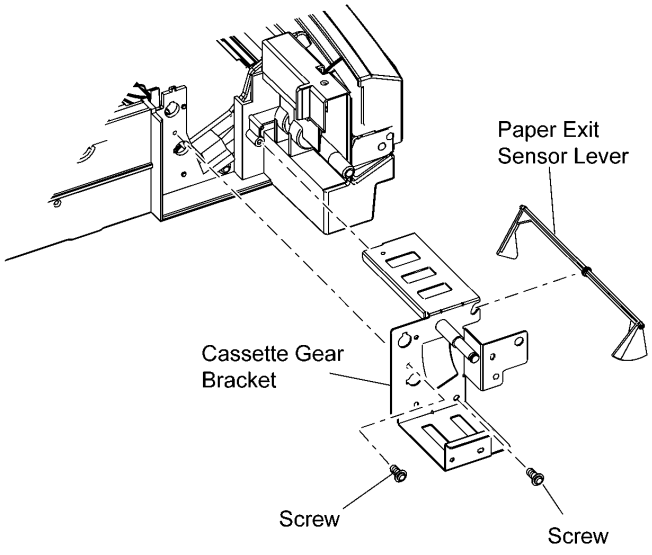
Note:

When reinstalling the upper cassette paper chute, the projection (A) must be aligned with the part (B).



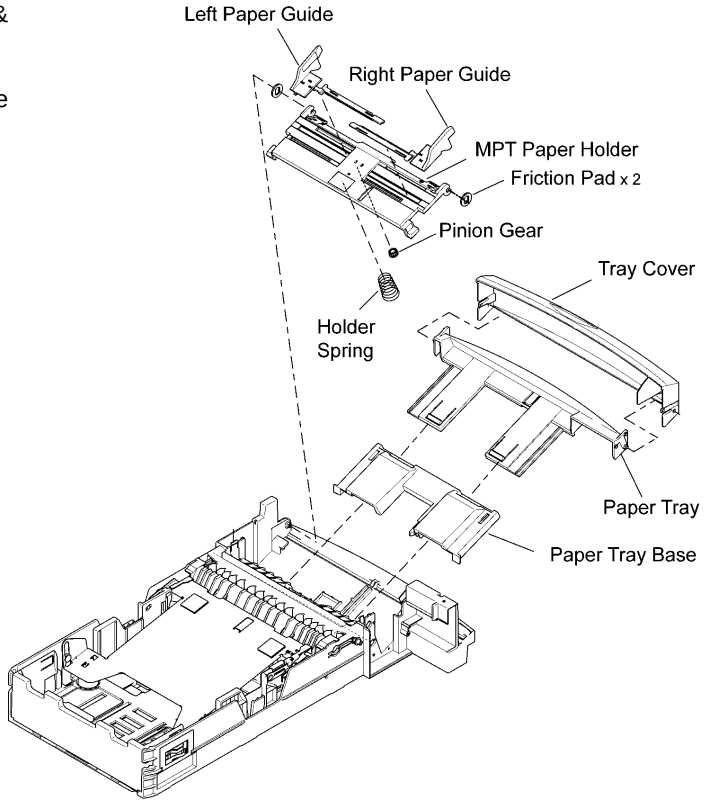
(12) Remove the cassette gear bracket (2 screws).

(13) Remove the paper exit sensor lever.



(14) Remove the holder spring and MPT paper holder with left & right paper guides.

(15) The tray cover, paper tray and paper tray base can be removed from the cassette.



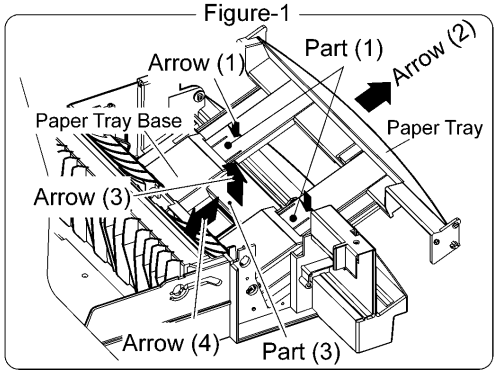
Note 1 : Removing the paper tray (see figure-1)

Slide out the paper tray in the arrow (2) direction while pressing the part (1) of paper tray in the arrow (1) direction.

Note 2 : Removing the paper tray base (see figure-1)

Move the paper tray base in the arrow (4) direction while raising the part (3) of paper tray base in the arrow (3) direction.

Figure-1



(16) Release the corner separator from the hook, then remove the corner separator by moving it as shown Figure-1.

(17) Raise the cassette base plate in the arrow (3) direction.

(18) Slide the cassette base plate in the arrow (4) direction, and remove it.

(19) Remove the 2 springs.

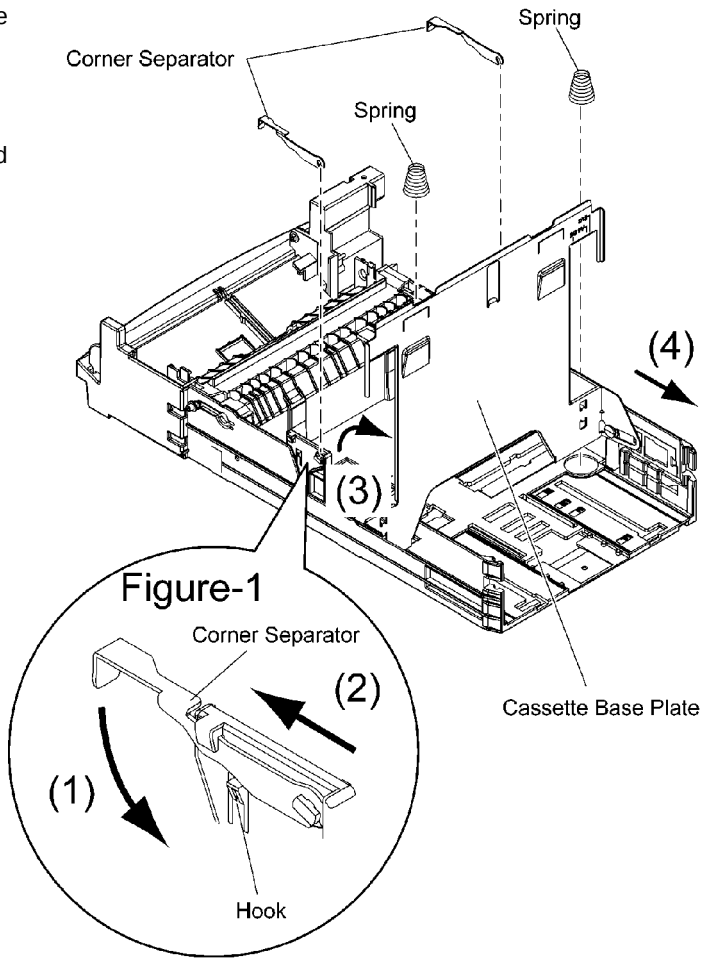
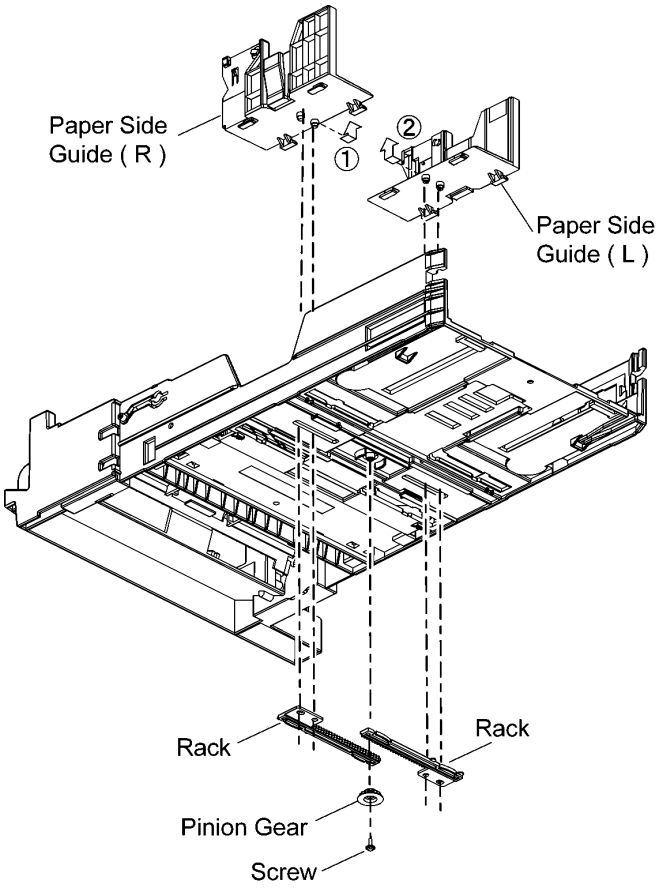


Figure-1

(20) Remove the paper guide (R) and paper guide (L) by moving each paper guide as shown arrows (1) and (2).

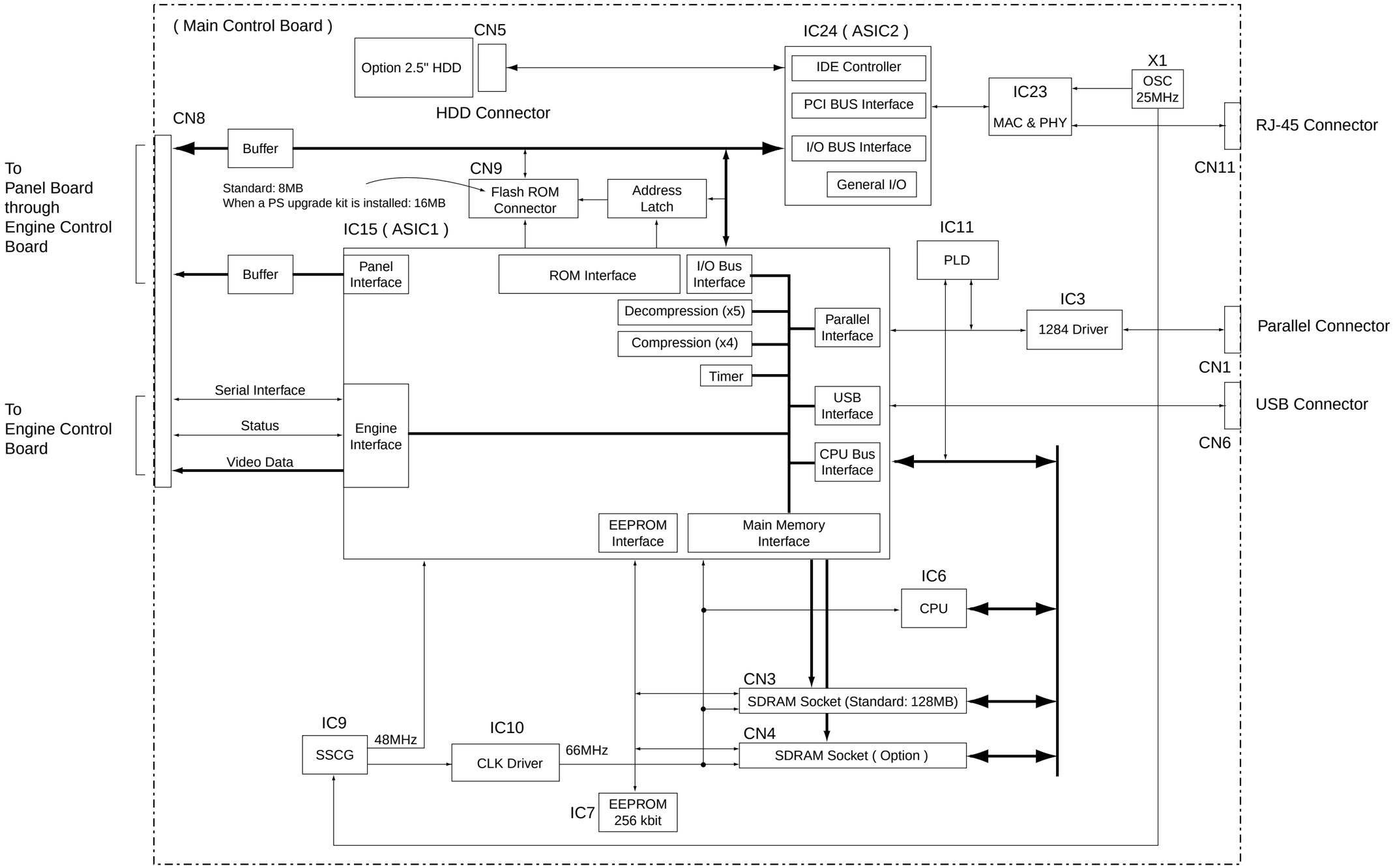
(21) Remove the screw, pinion gear and 2 racks.



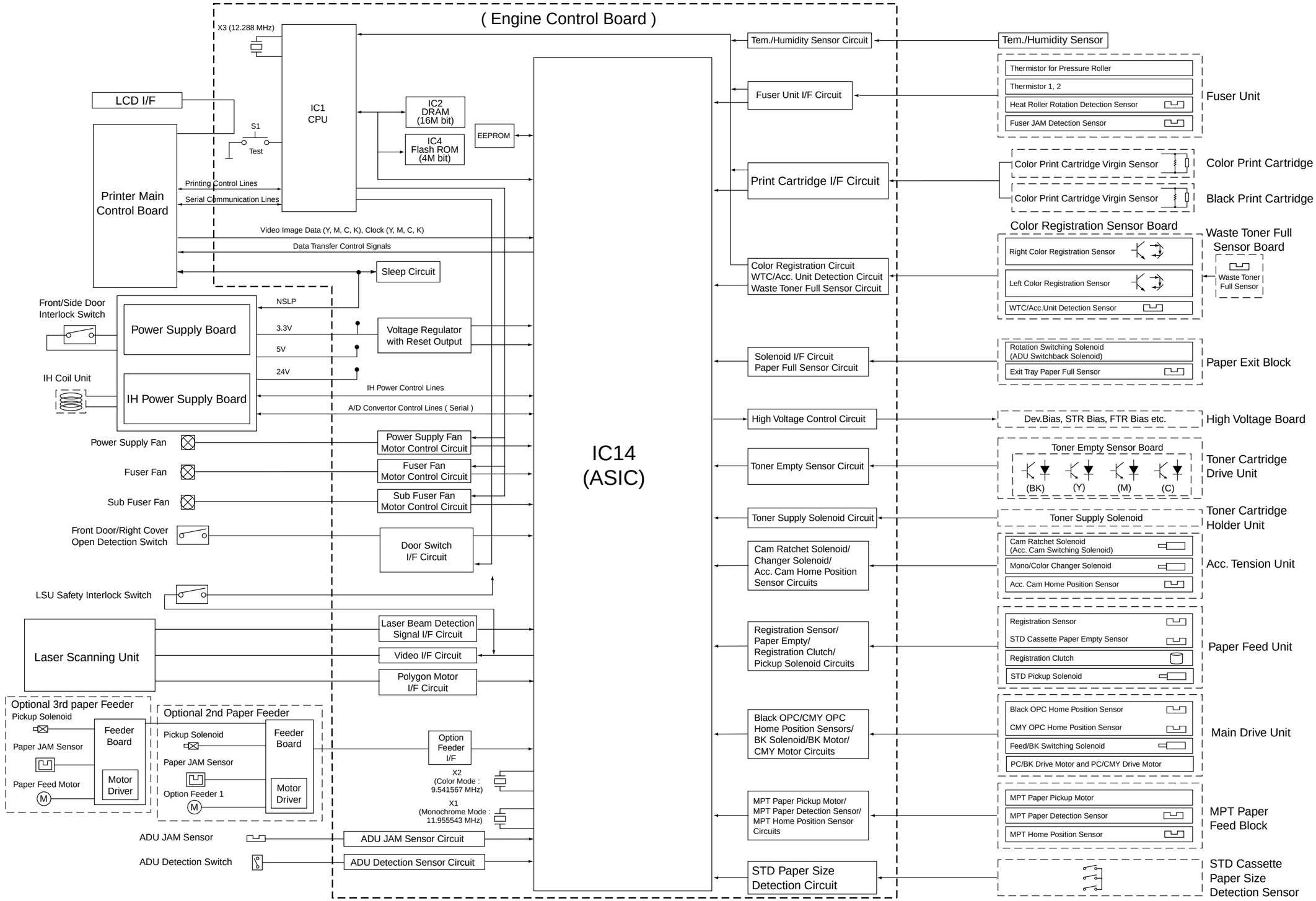
9 Block and Connection Diagrams

9.1. Block Diagram

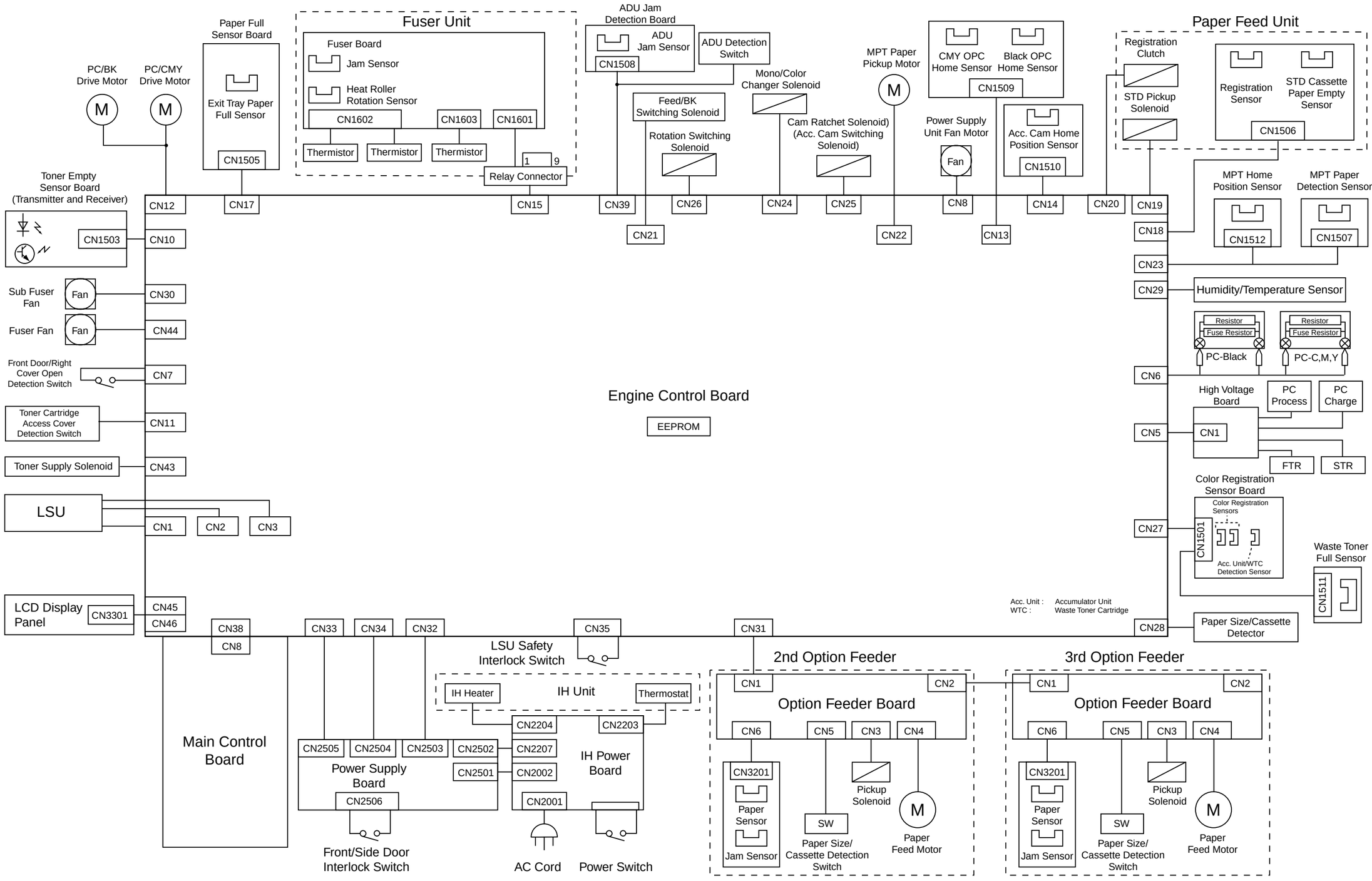
9.1.1. Printer Main Control Board Block Diagram



9.1.2. Engine Control Board Block Diagram



9.2. Connection Diagram



DP-CL18

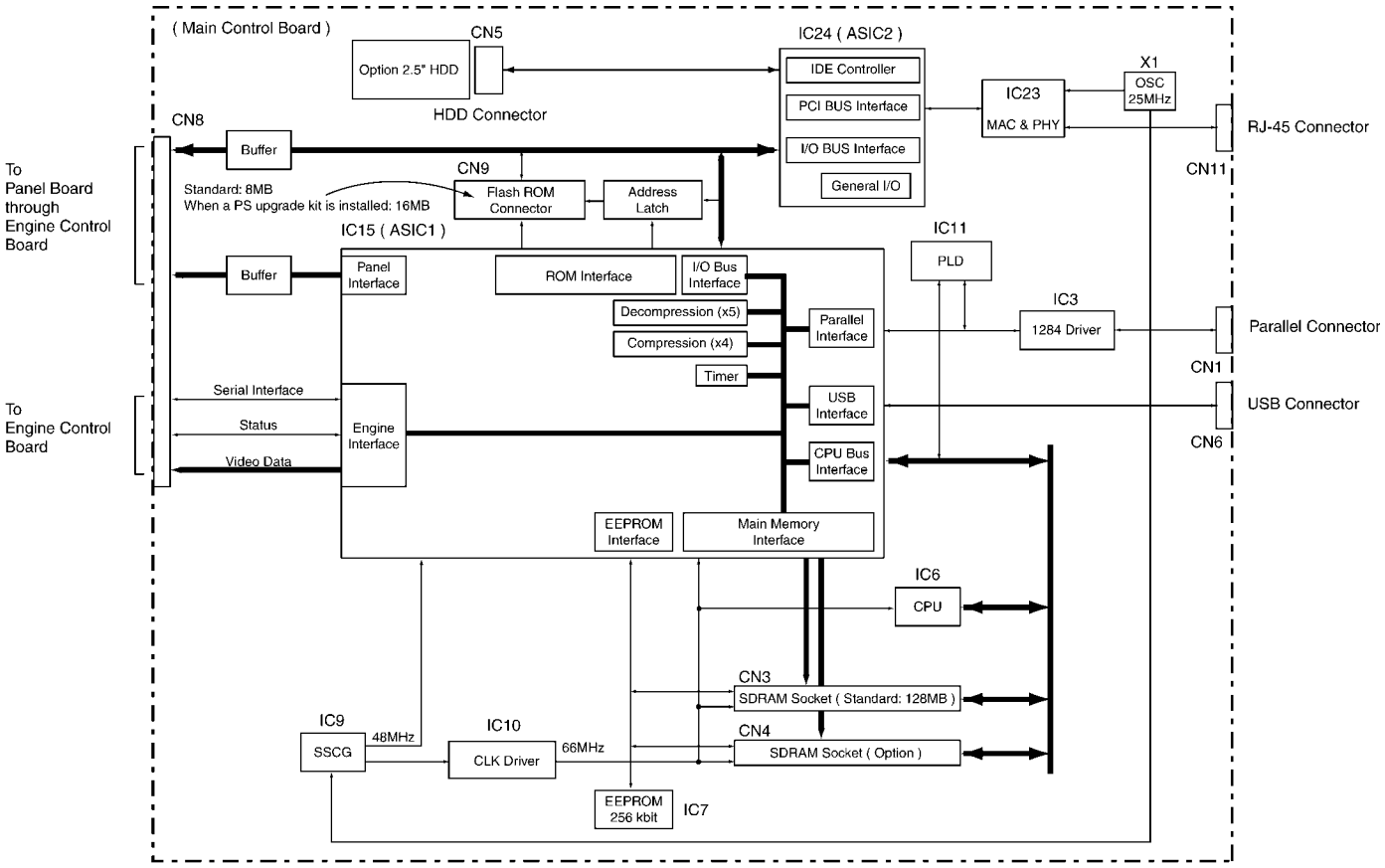
10 Electrical Circuit General Description

10.1. General Description

10.1.1. Printer Main Control Board General Description

The printer main control board consists of CPU (IC6), ASIC1 (IC15), ASIC2 (IC24), NW control LSI (IC23), main memory (CN3, CN4: SO-DIMM), program memory (CN9: ROM) and hard disk (optional HDD).

The printer main control board receives the printing data (PCL or PS) from the host computer through the 10/100Base ethernet interface (RJ-45 connector), USB interface or parallel interface. The printer main control board recognizes the type (PCL or PS) of data, creates the image data from the received data, compresses the image data, expands the compressed image data to the RAW bitmap data (decompression), and outputs the bitmap data (video data) to the engine control board as the printing data.



<ASIC1>

ASIC1 (IC15) that is controlled by CPU is the core on the printer main control board. The followings are the main function:

CPU Bus Interface

ASIC1 is connected to CPU (IC6) and main memory (SO-DIMM) by the CPU bus. The CPU bus interface controls the CPU bus.

Main Memory (SDRAM) Interface

This interface controls the main memory consists of the SDRAM.

IO Bus Interface

This interface controls the IO bus that communicates with ASIC2, flash ROM and control panel.

Parallel Interface

This is the parallel interface for communicating with the host computer.

USB Interface

This is the USB interface for communicating with the host computer.

Engine Interface

This outputs the video data to the engine control board while synchronizing with the synchronizing signal from the engine control board.

EEPROM Interface

This is for communicating with EEPROM.

Compression

This is for compressing the RAW bitmap data for cyan, magenta, yellow and black.

Decompression

This block consists of 5 decompression blocks. One is for pre-rendering to print. The remaining 4 blocks is for color compressed bitmap data (cyan, magenta, yellow and black). The compressed data is expanded to the bitmap data by this block.

Timers

This block is for general purpose 35bit timer. There are 3 timers.

<ASIC2 (IC24)>

ASIC1 (IC15) that is controlled by CPU is the core on the printer main control board. The following are the main functions.

IO Bus Interface

This is the bus for communicating between ASIC2 and ASIC1 (IC15). This interface communicates between ASIC1 and ASIC2 using the synchronizing clock transferring method. The frequency of synchronizing clock is 33 MHz.

PCI Interface

This is the bus for communicating 10/100 Mbps Ethernet controller IC23 (DP83816). This interface conforms with the 32bit/33 MHz 3.3 V PCI Ver 2.2 of PCI standard.

HDD Interface

This is the bus for connecting between ASIC2 and hard disk (HDD). This interface that conforms with the ATAPI3 standard drives the hard disk at the PIO mode 4 and multi word DMA mode 2.

10.1.2. Power Supply Board

This board supplies DC low voltage (+5V, +5VA, +5VB, +3.3V, +24V, +24VA, +24VB, +24VC) to each board.

Voltage	Supply to
+5V	Engine Control Board, Interlock Switch
+5VA	Main Control Board, Engine Control Board (Sleep Circuit), Optional 2nd Paper Feeder Board (sleep circuit)
+5VB	Main Control Board
+3.3V	Engine Control Board
+24V	Interlock Switch
+24VA	CMY Motor, MPT Paper Pickup Motor
+24VB	BK Motor, High Voltage Board
+24VC	Polygon Motor in LSU (Laser Scanning Unit), Power Supply Unit Fan Motor, Sub Fuser Fan Motor, Drive Motor in option feeder, Registration Clutch, 6 Solenoids, 2 Solenoids in option feeder

10.1.3. IH Power Supply Board

This board supplies the power to IH fuser system consists of IH coil and Fuser Unit.

10.1.4. High Voltage Board

This board outputs 12 high voltages used for electronic photographic process. The 12 voltages consists of 2 (VCH: DC -1,000 ~ -1,400V) for C, M, Y and black color OPCs, 4 development bias (VB: DC-100 ~ -300V; AC350Vp-p) for each color, 4 supply bias (VSR: -200 ~ -400V) for each color, FTR bias (FTR: 250 ~ 1,800V), STR bias (STR: 500 ~ 6,200V). The VCH, VB, VSR, FTR and STR voltages are varied by D/A converter setting data from engine control board. If the signal

N is Low, VCH, VB, VSR, FTR and STR are generated. Each of the high voltages are specifically set depending on the print media, selected resolution, printing mode, duplex printing mode, humidity/temperature range of the room. The humidity and temperature ranges are detected by a humidity sensor.

10.1.5. Engine Control Board

This board is the core of the printer engine control. It´s major circuit consists of the EEPROM circuit, video interface circuit, high voltage board interface circuit, accumulator control circuit, fuser temperature control circuit, fuser unit interface circuit, option feeder interface circuit, registration clutch control circuit, solenoid control circuits, LSU interface circuit, IH control circuit, toner empty circuit, paper tray sensor circuit, paper feed unit interface circuit, paper eject unit interface circuit, color registration sensor control circuit,etc.

10.1.6. Color Registration Sensor Board

Mainly, this board consists of 2 LEDs and photo sensors. The photo sensors detects the reflected LED light from the accumulator belt surface to calculate the color mis-registration value.

10.1.7. Sensors and Small Boards

The following table explains the check points and signal levels of the sensors and small boards.

No.	Sensor Name /Sensor Board Name	Signal Name	Active	CN No. /Pin No. (Switch)	Position
1	BK Print Cartridge Virgin Sensor Board	PIKFUSEK	Analog	CN6/1	Black Print Cartridge
2	CMY Print Cartridge Virgin Sensor Board	PIKFUSEYMC	Analog	CN6/3	CMY Print Cartridge
3	Front/Right Door Open Detection Switch	DOPEN	H	CN7/1	Right side of Chassis (front side)
4	Black Toner Empty Sensor	EMPK	L	CN10/1	Toner Empty Sensor Board on Toner Cartridge Drive Unit
5	Cyan Toner Empty Sensor	EMPC	L	CN10/2	
6	Yellow Toner Empty Sensor	EMPY	L	CN10/7	
7	Magenta Toner Empty Sensor	EMPM	L	CN10/8	
8	Toner Cartridge Access Cover Detection Switch	TCDOPEN	H	CN11/2	Top Cover
9	CMY PC Home Position Sensor	YMCZPH	H	CN13/2	OPC Cam Home Position Sensor Board on Main Drive Unit
10	Black PC Home Position Sensor	KZPH	H	CN13/3	
11	Accumulator Cam Home Position Sensor	ITHOME1	H	CN14/2	Accumulator Tension Unit
12	Fuser Unit Detection Sensor	FSRNON	Analog	CN15/1	Fuser Unit *1 At the printing, this signal alternates between high and low levels. If not so, any troubles may be occurred.
13	Thermistor 1	TH1HIGH	Analog	CN15/4	
14	Thermistor 2	TH2HIGH	Analog	CN15/3	
15	Pressure Roller Thermistor	THFUSE	Analog	CN15/5	
16	Heat Roller Rotation Sensor	ROTATE	H/L*1	CN15/6	
17	Fuser Jam (Paper Ejection) Sensor	NFSRJAM	L	CN15/7	
18	Paper Full Sensor	EXITFULL	H	CN17/3	Paper Full Sensor Board in paper exit block
19	Paper Empty Sensor	STPNON	H	CN18/2	Paper Empty/Registration Sensor Board on Paper Feed Unit
20	Registration Sensor	NREGSEN	L	CN18/3	
21	MPT Home Position Sensor	MPTHOME	H	CN23/3	Left side of Chassis (front side)
22	MPT Paper Empty Sensor	MPPSEN	L	CN23/5	
23	Waste Toner Full Sensor	TBFUL	H	CN27/8	By Power Switch

No.	Sensor Name /Sensor Board Name	Signal Name	Active	CN No. /Pin No. (Switch)	Position
24	Left Side Color Registration Sensor	SNS_L	Analog	CN27/1	Color Registration Sensor Board
25	Waste Toner Cartridge Detection Sensor	WTB_NON	L	CN27/6	
26	Right Side Color Registration Sensor	SNS_R	Analog	CN27/3	
27	Paper Size Size 1 Switch	STPSZ1	(Table 1)	CN28/1	Rear side of Chassis (paper size detector)
28	Paper Size Size 2 Switch	STPSZ2	(Table 1)	CN28/2	
29	Paper Cassette Detection Switch	STNON	H	CN28/4	
30	Temperature Sensor	TEMP	Analog	CN29/4	Humidity/Temperature Sensor Board at left side of Chassis
31	Humidity Sensor	HUM	Analog	CN29/2	
32	ADU Detection Sensor	ADUNON	H	CN39/2	Inner Cover (at Front side of Chassis)
33	ADU Jam Detection Sensor	NADUJAM	L	CN39/5	
34	Paper Jam Sensor	ACFJAM	L	CN6/3	Option Feeder
35	Paper Empty Sensor	ACFPNON	H	CN6/2	
36	Option Cassette Paper Size 1 Switch	ACFPSZ1	(Table 2)	CN5/1	
37	Option Cassette Paper Size 2 Switch	ACFPSZ2	(Table 2)	CN5/2	
38	Option Cassette Detection Switch	ACFCNON	H	CN5/4	

(Table 1)

Paper Size	Letter	A4	B5	Legal
STPSZ2	L	L	H	H
STPSZ1	L	H	L	H

(Table 2)

Paper Size	Letter	A4	B5	Legal
ACFPSZ2	L	L	H	H
ACFPSZ1	L	H	L	H

10.2. Explanation of Connector

10.2.1. Main Control Board

10.2.1.1. CN1 (on main control board): Parallel Interface Connector

CN1 Parallel Interface Connector

Pin No.	Signal Name	Description	In/Out
1	nStrobe	Strobe	In
2	Data0	Data0	In/Out
3	Data1	Data1	In/Out
4	Data2	Data2	In/Out
5	Data3	Data3	In/Out
6	Data4	Data4	In/Out
7	Data5	Data5	In/Out
8	Data6	Data6	In/Out
9	Data7	Data7	In/Out
10	nAck	Ack	Out
11	Busy	Busy	Out
12	PError	Error	Out
13	Select	Select	Out
14	NAutoFd	AutoFd	In
15	NC1	Non Connect	---
16	GND1	Logic Ground	---
17	GND2	Chassis Ground	---
18	PLogH	Peripheral Logic	Out
19	GND3	Signal Ground	---
20	GND4	Signal Ground	---
21	GND5	Signal Ground	---
22	GND6	Signal Ground	---
23	GND7	Signal Ground	---
24	GND8	Signal Ground	---
25	GND9	Signal Ground	---
26	GND10	Signal Ground	---
27	GND11	Signal Ground	---
28	GND12	Signal Ground	---
29	GND13	Signal Ground	---
30	GND14	Signal Ground	---
31	nInit	Init	In
32	nFault	Fault	Out
33	NC2	Non Connect	---
34	NC3	Non Connect	---
35	NC4	Non Connect	---
36	NSelIn	Device Select Signal	In

10.2.1.2. CN3 and CN4 (on main control board): SO-DIMM Connector

CN3 SO-DIMM Connector (Standard)
CN4 SO-DIMM Connector (Option) (1 of 4)

Pin No.	Signal Name	Description	In/Out
1	VSS1	Ground	---
2	VSS10	Ground	---
3	DQ0	Data input/output	In/Out
4	DQ32	Data input/output	In/Out
5	DQ1	Data input/output	In/Out
6	DQ33	Data input/output	In/Out
7	DQ2	Data input/output	In/Out
8	DQ34	Data input/output	In/Out
9	DQ3	Data input/output	In/Out
10	DQ35	Data input/output	In/Out
11	VCC1	3.3V	---
12	VCC10	3.3V	---
13	DQ4	Data input/output	In/Out
14	DQ36	Data input/output	In/Out
15	DQ5	Data input/output	In/Out
16	DQ37	Data input/output	In/Out
17	DQ6	Data input/output	In/Out
18	DQ38	Data input/output	In/Out
19	DQ7	Data input/output	In/Out
20	DQ39	Data input/output	In/Out
21	VSS2	Ground	---
22	VSS11	Ground	---
23	DQMB0	Data Mask	Out
24	DQMB4	Data Mask	Out
25	DQMB1	Data Mask	Out
26	DQMB5	Data Mask	Out
27	VCC2	3.3V	---
28	VCC11	3.3V	---
29	A0	Address	Out
30	A3	Address	Out
31	A1	Address	Out
32	A4	Address	Out
33	A2	Address	Out
34	A5	Address	Out
35	VSS3	Ground	---
36	VSS12	Ground	---

CN3 SO-DIMM Connector (Standard)
CN4 SO-DIMM Connector (Option) (2 of 4)

Pin No.	Signal Name	Description	In/Out
37	DQ8	Data input/output	In/Out
38	DQ40	Data input/output	In/Out
39	DQ9	Data input/output	In/Out
40	DQ41	Data input/output	In/Out
41	DQ10	Data input/output	In/Out
42	DQ42	Data input/output	In/Out
43	DQ11	Data input/output	In/Out
44	DQ43	Data input/output	In/Out
45	VCC3	3.3V	---
46	VCC12	3.3V	---
47	DQ12	Data input/output	In/Out
48	DQ44	Data input/output	In/Out
49	DQ13	Data input/output	In/Out
50	DQ45	Data input/output	In/Out
51	DQ14	Data input/output	In/Out
52	DQ46	Data input/output	In/Out
53	DQ15	Data input/output	In/Out
54	DQ47	Data input/output	In/Out
55	VSS4	Ground	---
56	VSS13	Ground	---
57	NC1	Non Connect	---
58	NC7	Non Connect	---
59	NC2	Non Connect	---
60	NC8	Non Connect	---
61	CK0	Clock	Out
62	CKE0	Clock Enable	Out
63	VCC4	3.3V	---
64	VCC13	3.3V	---
65	NRE	Row Address strobe	Out
66	NCE	Column Address strobe	Out
67	NW	Write Enable	Out
68	CKE1	Clock Enable	Out
69	NS0	Chip Select	Out
70	A12	Address	Out
71	NS1	Chip Select	Out
72	A13	Address	Out

CN3 SO-DIMM Connector (Standard)
CN4 SO-DIMM Connector (Option) (3 of 4)

Pin No.	Signal Name	Description	In/Out
73	NC4	Non Connect	---
74	CK1	Clock	Out
75	VSS5	Ground	---
76	VSS14	Ground	---
77	NC5	Non Connect	---
78	NC12	Non Connect	---
79	NC6	Non Connect	---
80	NC13	Non Connect	---
81	VCC5	3.3V	---
82	VCC14	3.3V	---
83	DQ16	Data input/output	In/Out
84	DQ48	Data input/output	In/Out
85	DQ17	Data input/output	In/Out
86	DQ49	Data input/output	In/Out
87	DQ18	Data input/output	In/Out
88	DQ50	Data input/output	In/Out
89	DQ19	Data input/output	In/Out
90	DQ51	Data input/output	In/Out
91	VSS6	Ground	---
92	VSS15	Ground	---
93	DQ20	Data input/output	In/Out
94	DQ52	Data input/output	In/Out
95	DQ21	Data input/output	In/Out
96	DQ53	Data input/output	In/Out
97	DQ22	Data input/output	In/Out
98	DQ54	Data input/output	In/Out
99	DQ23	Data input/output	In/Out
100	DQ55	Data input/output	In/Out
101	VCC6	3.3V	---
102	VCC15	3.3V	---
103	A6	Address	Out
104	A7	Address	Out
105	A8	Address	Out
106	BA0	Bank select Address	Out
107	VSS7	Ground	---
108	VSS16	Ground	---

CN3 SO-DIMM Connector (Standard)
CN4 SO-DIMM Connector (Option) (4 of 4)

Pin No.	Signal Name	Description	In/Out
109	A9	Address	Out
110	BA1	Bank select Address	Out
111	A10 (AP)	Address	Out
112	A11	Address	Out
113	VCC7	3.3V	---
114	VCC16	3.3V	---
115	DQMB2	Data Mask	Out
116	DQMB6	Data Mask	Out
117	DQMB3	Data Mask	Out
118	DQMB7	Data Mask	Out
119	VSS8	Ground	---
120	VSS17	Ground	---
121	DQ24	Data input/output	In/Out
122	DQ56	Data input/output	In/Out
123	DQ25	Data input/output	In/Out
124	DQ57	Data input/output	In/Out
125	DQ26	Data input/output	In/Out
126	DQ58	Data input/output	In/Out
127	DQ27	Data input/output	In/Out
128	DQ59	Data input/output	In/Out
129	VCC8	3.3V	---
130	VCC17	3.3V	---
131	DQ28	Data input/output	In/Out
132	DQ60	Data input/output	In/Out
133	DQ29	Data input/output	In/Out
134	DQ61	Data input/output	In/Out
135	DQ30	Data input/output	In/Out
136	DQ62	Data input/output	In/Out
137	DQ31	Data input/output	In/Out
138	DQ63	Data input/output	In/Out
139	VSS9	Ground	---
140	VSS18	Ground	---
141	SDA	Serial Data/Address	In/Out
142	SCL	Serial Clock	Out
143	VCC9	3.3V	---
144	VCC18	3.3V	---

10.2.1.3. CN5 (on main control board): Option Hard Disk Connector

CN5 Option HDD Connector (1 of 2)

Pin No.	Signal Name	Description	In/Out
a1	NHRST	Reset For Host	Out
a2	DD[7]	Data	In/Out
a3	DD[6]	Data	In/Out
a4	DD[5]	Data	In/Out
a5	DD[4]	Data	In/Out
a6	DD[3]	Data	In/Out
a7	DD[2]	Data	In/Out
a8	DD[1]	Data	In/Out
a9	DD[0]	Data	In/Out
a10	GND7	Ground	---
a11	HDDREQ	DMA Request	In
a12	NHDIOW	I/O Write	Out
a13	NHDIOR	I/O Read	Out
a14	HDRDY	I/O Ready	In
a15	NHDACK	DMA Ack	Out
a16	HDINT	Interrupt Request	In
a17	HDA[1]	Device Address	Out
a18	HDA[0]	Device Address	Out
a19	NHCS[0]	Chip Select	Out
a20	DASP	Device Active/Slave Present	In/Out
a21	+5V2	5V	---
a22	GND1	Ground	---

CN5 Option HDD Connector (2 of 2)

Pin No.	Signal Name	Description	In/Out
b1	GND8	Ground	---
b2	DD[8]	Data	In/Out
b3	DD[9]	Data	In/Out
b4	DD[10]	Data	In/Out
b5	DD[11]	Data	In/Out
b6	DD[12]	Data	In/Out
b7	DD[13]	Data	In/Out
b8	DD[14]	Data	In/Out
b9	DD[15]	Data	In/Out
b10	NC2	Non Connect	---
b11	GND6	Ground	---
b12	GND5	Ground	---
b13	GND4	Ground	---
b14	CSEL	Cable Select	Out
b15	GND3	Ground	---
b16	NHIOCS16	Reserve	In
b17	PDIAG	Passed Diagnostics	In/Out
b18	HDA[2]	Device Address	Out
b19	NHCS[1]	Chip Select	Out
b20	GND2	Ground	---
b21	+5V1	5V	---
b22	NC1	Non Connect	---

10.2.1.4. CN6 (on main control board): USB Connector

CN6 USB Connector

Pin No.	Signal Name	Description	In/Out
1	VBUS	VBUS	In
2	D-	D-	In/Out
3	D+	D+	In/Out
4	GND	Ground	---

10.2.1.5. CN8 (on main control board) to engine control board (CN38)

CN8 Engine I/F Connector (1 of 3)

Pin No.	Signal Name	Description	In/Out
A32	FP3	Ground	---
A31	FP6(LCD[4])	Data [4] for front panel	In/Out
A30	FP9(LCD[1])	Data [1] for front panel	In/Out
A29	FP12(LCD[7])	Data [7] for front panel	In/Out
A28	FP15(KEYRD)	Key Read for front panel	Out
A27	FP18(LCDRS)	Registor for front panel	Out
A26	FP21(LCDGND)	Ground for front panel	---
A25	NENG	Engine Alive	In
A24	NSTS	Serial data from engine to Main Control	In
A23	NCMD	Serial data from Main Control to engine	Out
A22	GND	Ground	---
A21	NHSYNC[K]	Horizontal Sync for Black	In
A20	GND	Ground	---
A19	GND	Ground	---
A18	GND	Ground	---
A17	NHSYNC[C]	Horizontal Sync for Cyan	In
A16	GND	Ground	---
A15	GND	Ground	---
A14	GND	Ground	---
A13	NHSYNC[M]	Horizontal Sync for Magenta	In
A12	GND	Ground	---
A11	GND	Ground	---
A10	GND	Ground	---
A9	NHSYNC[Y]	Horizontal Sync for Yellow	In
A8	GND	Ground	---
A7	GND	Ground	---
A6	5VA	+5V	---
A5	5VA	+5V	---
A4	GND	Ground	---
A3	GND	Ground	---
A2	GND	Ground	---
A1	ENGRDY	Engine Reset	In

CN8 Engine I/F Connector (2 of 3)

Pin No.	Signal Name	Description	In/Out
B32	FP2	Ground	---
B31	FP5(LCD[3])	Data [3] for front panel	In/Out
B30	FP8(LCD[5])	Data [5] for front panel	In/Out
B29	FP11(LCD[0])	Data [0] for front panel	In/Out
B28	FP14(LCDEN)	Enable for front panel	Out
B27	FP17(LCD5V)	+5V for front panel	---
B26	FP20(LCD5V)	+5V for front panel	---
B25	NSLP	Sleep	Out
B24	CRDY	Controller Ready	Out
B23	NVD2[K]	Video Data 2 for Black	Out
B22	NVD0[K]	Video Data 0 for Black	Out
B21	NVSZ[K]	Vertical Size for Black	In
B20	GND	Ground	---
B19	NVD2[C]	Video Data 2 for Cyan	Out
B18	NVD0[C]	Video Data 0 for Cyan	Out
B17	NVSZ[C]	Vertical Size for Cyan	In
B16	GND	Ground	---
B15	NVD2[M]	Video Data 2 for Magenta	Out
B14	NVD0[M]	Video Data 0 for Magenta	Out
B13	NVSZ[M]	Vertical Size for Magenta	In
B12	GND	Ground	---
B11	NVD2[Y]	Video Data 2 for Yellow	Out
B10	NVD0[Y]	Video Data 0 for Yellow	Out
B9	NVSZ[Y]	Vertical Size for Yellow	In
B8	GND	Ground	---
B7	GND	Ground	---
B6	5VA	+5V	---
B5	5VB	+5V	---
B4	5VB	+5V	---
B3	GND	Ground	---
B2	GND	Ground	---
B1	GND	Ground	---

CN8 Engine I/F Connector (3 of 3)

Pin No.	Signal Name	Description	In/Out
C32	FP1	Gronud	---
C31	FP4	Ground	---
C30	FP7(LCD[2])	Data [2] for front panel	In/Out
C29	FP10(LCD[6])	Data [6] for front panel	In/Out
C28	FP13(LEDSET)	LED set for front panel	Out
C27	FP16(LCDRW)	Read/Write for front panel	Out
C26	FP19(NLCDEN)	Enable for front panel	Out
C25	FP22(LCDGND)	Ground for front panel	---
C24	PRDY	Engine Ready	In
C23	NVD3[K]	Video Data 3 for Black	Out
C22	NVD1[K]	Video Data 1 for Black	Out
C21	DCLK[K]	Video Clock for Black	Out
C20	GND	Ground	---
C19	NVD3[C]	Video Data 3 for Cyan	Out
C18	NVD1[C]	Video Data 1 for Cyan	Out
C17	DCLK[C]	Video Clock for Cyan	Out
C16	GND	Ground	---
C15	NVD3[M]	Video Data 3 for Magenta	Out
C14	NVD1[M]	Video Data 1 for Magenta	Out
C13	DCLK[M]	Video Clock for Magenta	Out
C12	GND	Ground	---
C11	NVD3[Y]	Video Data 3 for Yellow	Out
C10	NVD1[Y]	Video Data 1 for Yellow	Out
C9	DCLK[Y]	Video Clock for Yellow	Out
C8	GND	Ground	---
C7	5VHD	+5V	---
C6	5VA	+5V	---
C5	5VB	+5V	---
C4	5VB	+5V	---
C3	GND	Ground	---
C2	GND	Ground	---
C1	GND	Ground	---

10.2.1.6. CN9 (on main control board): Flash-ROM Connector

CN9 Flash-ROM Connector (1 of 2)

Pin No.	Signal Name	Description	In/Out
1	GND1	Ground	---
2	GND2	Ground	---
3	GND3	Ground	---
4	GND4	Ground	---
5	LIOA[0]	Address	Out
6	LIOA[1]	Address	Out
7	LIOA[2]	Address	Out
8	LIOA[3]	Address	Out
9	LIOA[4]	Address	Out
10	LIOA[5]	Address	Out
11	LIOA[6]	Address	Out
12	LIOA[7]	Address	Out
13	LIOA[8]	Address	Out
14	LIOA[9]	Address	Out
15	LIOA[10]	Address	Out
16	LIOA[11]	Address	Out
17	LIOA[12]	Address	Out
18	LIOA[13]	Address	Out
19	LIOA[14]	Address	Out
20	LIOA[15]	Address	Out
21	LIOA[16]	Address	Out
22	LIOA[17]	Address	Out
23	LIOA[18]	Address	Out
24	LIOA[19]	Address	Out
25	LIOA[20]	Address	Out
26	LIOA[21]	Address	Out
27	LIOA[22]	Address	Out
28	LIOA[23]	Address	Out
29	LIOA[24]	Address	Out
30	NC1	Non Connect	---
31	VDD1	3.3V	---
32	VDD2	3.3V	---
33	VDD3	3.3V	---
34	VDD4	3.3V	---
35	VDD5	3.3V	---
36	LIOD[0]	Data	In/Out

CN9 Flash-ROM Connector (2 of 2)

Pin No.	Signal Name	Description	In/Out
37	LIOD[1]	Data	In/Out
38	LIOD[2]	Data	In/Out
39	LIOD[3]	Data	In/Out
40	LIOD[4]	Data	In/Out
41	LIOD[5]	Data	In/Out
42	LIOD[6]	Data	In/Out
43	LIOD[7]	Data	In/Out
44	LIOD[8]	Data	In/Out
45	LIOD[9]	Data	In/Out
46	LIOA[10]	Data	In/Out
47	LIOD[11]	Data	In/Out
48	LIOD[12]	Data	In/Out
49	LIOD[13]	Data	In/Out
50	LIOD[14]	Data	In/Out
51	LIOD[15]	Data	In/Out
52	NFCE[0]	Chip Enable	Out
53	NFCE[1]	Chip Enable	Out
54	NFCE[2]	Chip Enable	Out
55	NROMSEL	Flash/ROM Select	In
56	NFOE	Output Enable	Out
57	NFWE	Write Enable	Out
58	NFWP	Write Protect	Out
59	NFRST	Reset	Out
60	FRNB	Busy	In
61	NC3	Non Connect	---
62	NC4	Non Connect	---
63	VCC1	Non Connect (Reserved for +5V)	---
64	VCC2	Non Connect (Reserved for +5V)	---
65	VCC3	Non Connect (Reserved for +5V)	---
66	VCC4	Non Connect (Reserved for +5V)	---
67	VCC5	Non Connect (Reserved for +5V)	---
68	NC5	Non Connect (Reserved for +5V)	---
69	GND5	Ground	---
70	GND6	Ground	---
71	GND7	Ground	---
72	GND8	Ground	---

10.2.1.7. CN11 (on main control board): RJ-45 Connector (10/100 Base-T)

CN11 RJ-45 Connector

Pin No.	Signal Name	Description	In/Out
1	TX+	Serial Transmit Data+	Out
2	TX-	Serial Transmit Data-	Out
3	RX+	Serial Receive Data+	In
4	NC	Non Connector	---
5	NC	Non Connector	---
6	RX-	Serial Receive Data-	In
7	NC	Non Connector	---
8	NC	Non Connector	---

10.2.2. Connectors for connecting between Engine Control Board and other boards/units/switches/solenoids

10.2.2.1. CN1 (on engine board) / CN1 (on LSU)

CN1-E : CN1 on engine board

CN1 (on engine board) / CN1 (on LSU) CN1-L : CN1 on LSU

Pin No.	Signal Name	Description	In/Out	
			CN1-E	CN1-L
1	+5VLD	+5V	---	---
2	+5VGND	Ground	---	---
3	5VGND	Ground	---	---
4	5VGND	Ground	---	---
5	NENB	LD Enable	Out	In
6	PSEL	LD Light Power Select	Out	In
7	-VIDEO_K	Black Video Data	Out	In
8	NADJUST_K	Black Adjust Enable	Out	In
9	-VIDEO_C	Cyan Video Data	Out	In
10	NADJUST_C	Cyan Adjust Enable	Out	In
11	5VGND	Ground	---	---
12	-VIDEO_M	Magenta Video Data	Out	In
13	NADJUST_M	Magenta Adjust Enable	Out	In
14	5VGND	Ground	---	---
15	-VIDEO_Y	Yellow Video Data	Out	In
16	NADJUST_Y	Yellow Adjust Enable	Out	In

10.2.2.2. CN2 (on engine board) / CN3 (on LSU)

CN2 (on engine board)/CN3 (on LSU)

Pin No.		Signal Name	Description	In/Out	
CN2	CN3			CN2	CN3
5	5	+24V	+24V	---	---
4	4	24VGND	Ground	---	---
3	3	NPMCTL	Motor Control	Out	In
2	2	NPMLD	Motor Lock Detect	In	Out
1	1	PMCLK	Motor Clock	Out	In

10.2.2.3. CN3 (on engine board) / CN2 (on LSU)

CN3 (on engine board)/CN2 (on LSU)

Pin No.	Signal Name	Description	In/Out	
CN2/CN3			CN3	CN2
4	+5V	+5V	---	---
3	5VGND	Ground	---	---
2	NHSYNC	Horizontal Sync.	In	Out
1	+5VGND	Ground	---	---

10.2.2.4. CN5 (on engine board) / CN1 (on high voltage board)

CN5 (on engine board) / CN1 (on high voltage board)

Pin No.	Signal Name	Description	In/Out	
			CN5	CN1
1, 2, 3	GND	Ground	---	---
4	DHVACCLK	Dev. AC Clock	Out	In
5	DHVERR	HVU Error	In	Out
6	DLATHV	Serial D/A Converter Data Load	Out	IN
7	DHVEN	High Voltage Enable	Out	IN
8	DSDATHV	Serail D/A Converter Data	Out	IN
9	24VGND	Ground	---	---
10	DSCLKHV	Serial D/A Converter Clock	Out	In
11	+24VGND	Ground	---	---
12	+24VHV	+24V	---	---

10.2.2.5. CN6 (on engine board)

CN6 Print Cartridge (PC) Virgin Sensor Board I/F

Pin No.	Signal Name	Description	In/Out
1	PIKFUSEK	Black Print Cartridge Fuse	In/Out
2	GND	Ground	---
3	PIKFUSEYMC	CMY (Color) Print Cartridge Fuse	In/Out
4	GND	Ground	---

10.2.2.6. CN7 (on engine board)

CN7 Front/Right Door Open Detection Switch I/F

Pin No.	Signal Name	Description	In/Out
1	DOPEN	Front/Right Door Open	In
2	GND	Ground	---

10.2.2.7. CN8 (on engine board)

CN8 Power Supply Fan I/F

Pin No.	Signal Name	Description	In/Out
1	FANPWR	+24V	---
2	24VGND	Ground	---
3	PSFNERR	Power Supply Fan Error	In

10.2.2.8. CN10 (on engine board) / CN1503 (on toner empty sensor board)

CN10 (on engine board) / CN1503 (on toner empty sensor board)

Pin No.		Signal Name	Description	In/Out	
CN10	CN1503			CN10	CN1503
1	10	NEMPK	Black Toner Empty	In	Out
2	9	NEMPC	Cyan Toner Empty	In	Out
3	8	EMPLEDK	LED ON for Black	Out	In
4	7	GND	Ground	---	---
5	6	+5V_EMP	+5V	---	---
6	5	EMPLEDY	LED ON for Yellow	Out	In
7	4	NEMPY	Yellow Toner Empty	In	Out
8	3	NEMPM	Magenta Toner Empty	In	Out
9	2	EMPLEDC	LED ON for Cyan	Out	In
10	1	EMPLEDM	LED ON for Magenta	Out	In

10.2.2.9. CN11 (on engine board)

CN11 Toner Cartridge Access Cover Detection Switch I/F

Pin No.	Signal Name	Description	In/Out
2	TCDOPEN	Toner Cartridge Access Cover Open	In
1	GND	Ground	---

10.2.2.10. CN12 (on engine board) / CN1 (on CMY motor) / CN1 (BK motor)

CN12 (on engine board) / CN1 (on CMY motor) / CN1 (BK motor)

Pin No.			Signal Name	Description	In/Out		
CN12	CN1 (CMY)	CN1 (BK)			CN12	CN1 (CMY)	CN1 (BK)
1	1		+24VIR(IT)	+24V for BK Motor	---	---	
2		1	+24VIR(PIK)	+24V for CMY Motor	---		---
3	2		24VGND(IT)	Ground	---	---	
4		2	24VGND(PIK)	Ground	---		---
5	3		NITMLD(IT)	Lock Detect for BK Motor	In	Out	
6		3	NPIKMLD(PIK)	Lock Detect CMY Motor	In		Out
7	4		+5V(IT)	+5V for BK Motor	---	---	
8		4	+5V(PIK)	+5V for CMY Motor	---		---
9	5		NITMON(IT)	Start for BK Motor	Out	In	
10		5	NPIKMON(PIK)	Start for CMY Motor	Out		In
11	6		ITMCLK(IT)	Clock for BK Motor	Out	In	
12		6	PIKMCLK(PIK)	Clock for CMY Motor	Out		In
13	7		GND(IT)	Ground	---	---	
14		7	GND(PIK)	Ground	---		---
15	8		ITMG(IT)	Gain for BK Motor	Out	In	
16		8	PIKMG(PIK)	Gain for CMY Motor	Out		In

10.2.2.11. CN13 (on engine board) / CN1509 (on OPC cam home sensor board)

CN13 (on engine board) / CN1509 (OPC cam home sensor board)

Pin No.		Signal Name	Description	In/Out	
CN13	CN1509			CN13	CN1509
1	4	GND	Ground	---	---
2	3	YMCZPH	Color Print Cartridge Cam Home Position	In	Out
3	2	KZPH	Black Print Cartridge Cam Home Position	In	Out
4	1	+5V_OPCSEN	+5V	---	---

10.2.2.12. CN14 (on engine board) / CN1510 (on accumulator cam home position sensor board)

CN14 (on engine board) / CN1510 (on accumulator cam home position sensor board)

Pin No.	Signal Name	Description	In/Out	
			CN14	CN1510
1	+5V_CAMSEN	+5V	---	---
2	ITHOME1	Accumulator Cam Home Position	In	Out
3	GND	Ground	---	---

10.2.2.13. CN15 (on engine board) / CN1601 (on fuser unit)

CN15 (on engine board) / CN1601 (on fuser unit)

Pin No.		Signal Name	Description	In/Out	
CN15	CN1601			CN15	CN1601
1		FSRFNON	Fuser Unit Detect	In	
2	7	GND	Ground	---	---
3	6	TH2HIGH	Thermistor 2	In	Out
4	5	TH1HIGH	Thermistor 1	In	Out
5	4	THFUSE	Pressure Roller Thermistor	In	Out
6	3	ROTATE	Fuser Belt Rotation Detect	In	Out
7	2	NFSRJAM	Fuser Jam	In	Out
8	1	+5V_FSR	+5V	---	---
9		GND	Ground	---	

10.2.2.14. CN17 (on engine board) / CN1505 (on paper full sensor board)

CN17 (on engine board) / CN1505 (on paper full sensor board)

Pin No.	Signal Name	Description	In/Out	
CN17/CN1505			CN17	CN1505
1	+5V_EXIT	+5V	---	---
2	GND	Ground	---	---
3	EXITFULL	Paper Output Tray Full	In	Out
4	NC		---	---

10.2.2.15. CN18 (on engine board) / CN1506 (on paper empty/registration sensor board)

CN18 (on engine board) / CN1506 (on paper empty/registration sensor board)

Pin No.	Signal Name	Description	In/Out	
			CN18	CN1506
1	+5V	+5V	---	---
2	STPNON	Standard Paper Cassette Paper Empty	In	Out
3	NREGSEN	Registration Sensor	In	Out
4	GND	Ground	---	---

10.2.2.16. CN19 (on engine board)

CN19 Pickup Solenoid I/F

Pin No.	Signal Name	Description	In/Out
1	PICSOL	Pickup Solenoid Drive Line	---
2	SOLPWR	+24V	---

10.2.2.17. CN20 (on engine board)

CN20 Registration Clutch I/F

Pin No.	Signal Name	Description	In/Out
1	REGCLU	Registration Clutch Drive Line	---
2	+24VC	+24V	---

10.2.2.18. CN21 (on engine board)

CN21 Feed/BK Switching Solenoid I/F

Pin No.	Signal Name	Description	In/Out
1	+24VGND	Ground	---
2	NC	NC	---
3	FEEDCLU	BK Solenoid Drive Line	---

10.2.2.19. CN22 (on engine board)/CN1 (paper pickup motor)

CN22 Paper Pickup Motor I/F

Pin No.		Signal Name	Description	In/Out	
CN22	CN1			CN22	CN1
1	1	OUTB-	Paper Pickup Motor Drive Pulse	Out	In
2	2	OUTB	Paper Pickup Motor Drive Pulse	Out	In
3	3	OUTA-	Paper Pickup Motor Drive Pulse	Out	In
4	4	OUTA	Paper Pickup Motor Drive Pulse	Out	In

10.2.2.20. CN23 (on engine board) / CN1507 (on MPT paper detection sensor board) / CN1512 (on MPT home position sensor Board)

CN23 (on engine board) / CN1507 (on MPT paper detction sensor baord) / CN1512 (on MPT home position sensor board)

Pin No.			Signal Name	Description	In/Out		
CN23	CN1507	CN1512			CN23	CN1507	CN1512
1		3	+5V_MPT	+5V	---		---
2		2	GND	Ground	---		---
3		1	MPTHOME	MPT Home Position Detection Signal	In		Out
4	3		+5VA_MPT	+5V	---	---	
5	2		MPPSEN	MPT Paper Empty Detection Signal	In	Out	
6	1		GND	Ground	---	---	

10.2.2.21. CN24 (on engine board)

CN24 Changer Solenoid I/F

Pin No.	Signal Name	Description	In/Out
1	SOLPWR	+24V	---
2	NC	NC	---
3	ITSOL2	Changer Solenoid Drive Line	---

10.2.2.22. CN25 (on engine board)

CN25 Cam Ratchet Solenoid (Acc. Cam Switching Solenoid) I/F

Pin No.	Signal Name	Description	In/Out
1	ITSOL1	Cam Ratchet Solenoid Drive Line	---
2	NC	NC	---
3	SOLPWR	+24V	---

10.2.2.23. CN26 (on engine board)

CN26 Switchback Solenoid I/F

Pin No.	Signal Name	Description	In/Out
1	SOLPWR	+24V	---
2	ADUSOL	Switchback Solenoid Drive Line for Auto Duplex Unit	---

10.2.2.24. CN27 (on engine board) / CN1501 (on color registration sensor board)

CN27 (on engine board) / CN1501 (on color registration sensor board)

Pin No.		Signal Name	Description	In/Out	
CN27	CN1501			CN27	CN1501
1	1	SNS_L	Left Side Color Regist. Sensing Signal	In	Out
2	2	LED_L	Left Side LED ON/OFF signal	Out	In
3	3	SNS_R	Right Side Color Regist. Sensing Signal	In	Out
4	4	LED_R	Right Side LED ON/OFF signal	Out	In
5	5, 10	+5V_REG	+5V	---	---
6	6	WTB_NON	Waste Toner Cartridge Detection Signal	In	Out
7	7, 11	GND	Ground	---	---
8	8, 9	TBFUL	Waste Toner Cartridge Full Detection Signal	In	Out

10.2.2.25. CN28 (on engine board)

CN28 Paper Size Detector I/F

Pin No.	Signal Name	Description	In/Out
1	STPSZ1	Paper Size Detection signal 1	In
2	STPSZ2	Paper Size Detection signal 2	In
3	GND	Ground	----
4	STNON	Standard Cassette Detection signal	In

10.2.2.26. CN29 (on engine board) / CN1 (on humidity/temperature sensor board)

CN29 (on engine board) / CN1 (on humidity/temperature sensor board)

Pin No.	Signal Name	Description	In/Out	
			CN28	CN1
1	+5V_HUM	+5V	In	Out
2	HUM	Humidity Sensing signal	----	----
3	GND	Ground	In	Out
4	TEMP	Temperature Sensing signal	In	Out

10.2.2.27. CN30 (on engine board)

CN30 Sub Fuser Fan I/F

Pin No.	Signal Name	Description	In/Out
1	FANPWR	+24V	---
2	24VGND	Ground	---
3	RIPFNERR	Sub Fuser Fan Error	In

10.2.2.28. CN31 (on engine board) / CN1 (on option feeder unit)

CN31 (on engine board) / CN1 (on option feeder unit)

Pin No.	Signal Name	Description	In/Out	
			CN31	CN1
1	GND	Ground	---	---
2	SIOCS1	Option Feeder 1 SIO Chip Select	Out	In
3	SCLK	Option Feeder SIO Clock	Out	In
4	SIOCS2	Option Feeder 2 SIO Chip Select	Out	In
5	GND	Ground	---	---
6	SDI	Option Feeder SIO Input Data	In	Out
7	SDO	Option Feeder SIO Output Data	Out	In
8	24VGND	Ground	---	---
9	+5V	+5V	---	---
10	+24VC	+24V	---	---
11	NRST	Option Feeder SIO Reset	Out	In
12	+24VC	+24V	---	---
13	+5VA	+5V	---	---
14	24VGND	Ground	---	---
15	ACFNON1	Option Feeder 1 Non	Out	In
16	ACFSMNA1	Option Feeder 1 Motor Clock A	Out	In
17	SLP_CST_1	Option Cassette Non	In	Out
18	ACFSMNB1	Option Feeder 1 Motor Clock B	Out	In
19	ACFSMNA2	Option Feeder 2 Motor Clock A	Out	In
20	ACFSMNB2	Option Feeder 2 Motor Clock B	Out	In

10.2.2.29. CN32 (on engine board) / CN2503 (on power supply board)

CN32 (on engine board) / CN2503 (on power supply board)

Pin No.		Signal Name	Description	In/Out	
CN32	CN2503			CN32	CN2503
1	1	NCSAD	A/D Convertor Chip Select	Out	In
2	2	SCLKAD	A/D Convertor Clock	Out	In
3	3	SDOAD/DI	A/D Convertor Input Data	Out	In
4	4	SDIAD/DO	A/D Convertor Output Data	In	Out
5	5	DZCROSS	Zero Cross	In	Out
6	6	IHON	IH ON	Out	In
7	7	IHPOWER	+24V	Out	In
8	8	VIN100V	AC Line Voltage Detect	In	Out
9	9	GND	Ground	---	---

10.2.2.30. CN33 (on engine board) / CN2505 (on power supply board)

CN33 (on engine board) / CN2505 (on power supply board)

Pin No.		Signal Name	Description	In/Out	
CN33	CN2505			CN33	CN2505
1	1	+5VA	+5V	---	---
2	2	+5VA	+5V	---	---
3	3	GND	Ground	---	---
4	4	+5VB	+5V	---	---
5	5	+5VB	+5V	---	---
6	6	GND	Ground	---	---
7	7	GND	Ground	---	---
8	8	NSLP	Sleep	Out	In

10.2.2.31. CN34 (on engine board) / CN2504 (on power supply board)

CN34 (on engine board) / CN2504 (on power supply board)

Pin No.		Signal Name	Description	In/Out
CN34	CN2504			
1	1	+5V	+5V	---
2	2	GND	Ground	---
3	3	+3.3V	+3.3V	---
4	4	GND	Ground	---
5	5	+24VB	+24V	---
6	6	+24VB	+24V	---
7	7	24VGND	Ground	---
8	8	24VGND	Ground	---
9	9	+24VA	+24V	---
10	10	+24VA	+24V	---
11	11	24VGND	Ground	---
12	12	+24VC	+24V	---

10.2.2.32. CN35 (on engine board)

CN35 Safety Interlock Switch I/F

Pin No.	Signal Name	Description	In/Out
1	+5VLD	+5V	---
2	NC	NC	---
3	+5V	+5V	---

10.2.2.33. CN38 (on engine board; to main control board)

CN38 Printer Control Board I/F (1 of 3)

Pin No.	Signal Name	Description	In/Out
A32	GND	Ground	---
A31	FP6	Data 4 for front panel	In/Out
A30	FP9	Data 1 for front panel	In/Out
A29	FP12	Data 7 for front panel	In/Out
A28	FP15	Key Read for front panel	In
A27	FP18	Register Select for front panel	In
A26	FP21	Ground for front panel	---
A25	NENG	Engine Alive	Out
A24	NSTS	Serial data from engine to main control board	Out
A23	NCMD	Serial data from main control board to engine	In
A22	GND	Ground	---
A21	NHSYNC[K]	Horizontal Sync for Black	Out
A20	GND	Ground	---
A19	GND	Ground	---
A18	GND	Ground	---
A17	NHSYNC[C]	Horizontal Sync for Cyan	Out
A16	GND	Ground	---
A15	GND	Ground	---
A14	GND	Ground	---
A13	NHSYNC[M]	Horizontal Sync for Magenta	Out
A12	GND	Ground	---
A11	GND	Ground	---
A10	GND	Ground	---
A9	NHSYNC[Y]	Horizontal Sync for Yellow	Out
A8	GND	Ground	---
A7	GND	Ground	---
A6	5VA	+5V	---
A5	5VA	+5V	---
A4	GND	Ground	---
A3	GND	Ground	---
A2	GND	Ground	---
A1	ENGRDY	Engine Reset	Out

CN38 Printer Control Board I/F (2 of 3)

Pin No.	Signal Name	Description	In/Out
B32	GND	Ground	---
B31	FP5	Data 3 for front panel	In/Out
B30	FP8	Data 5 for front panel	In/Out
B29	FP11	Data 0 for front panel	In/Out
B28	FP14	Enable for front panel	In
B27	FP17	+5V for front panel	---
B26	FP20	+5V for front panel	---
B25	NSLP	Sleep	In
B24	CRDY	Controller Ready	In
B23	NVD2[K]	Video Data 2 for Black	In
B22	NVD0[K]	Video Data 0 for Black	In
B21	NVSZ[K]	Vertical Size for Black	Out
B20	GND	Ground	---
B19	NVD2[C]	Video Data 2 for Cyan	In
B18	NVD0[C]	Video Data 0 for Cyan	In
B17	NVSZ[C]	Vertical Size for Cyan	Out
B16	GND	Ground	---
B15	NVD2[M]	Video Data 2 for Magenta	In
B14	NVD0[M]	Video Data 0 for Magenta	In
B13	NVSZ[M]	Vertical Size for Magenta	Out
B12	GND	Ground	---
B11	NVD2[Y]	Video Data 2 for Yellow	In
B10	NVD0[Y]	Video Data 0 for Yellow	In
B9	NVSZ[Y]	Vertical Size for Yellow	Out
B8	GND	Ground	---
B7	GND	Ground	---
B6	5VA	+5V	---
B5	5VB	+5V	---
B4	5VB	+5V	---
B3	GND	Ground	---
B2	GND	Ground	---
B1	GND	Ground	---

CN38 Printer Control Board I/F (3 of 3)

Pin No.	Signal Name	Description	In/Out
C32	GND	Ground	---
C31	FP4	Ground for front panel	---
C30	FP7	Data 2 for front panel	In/Out
C29	FP10	Data 6 for front panel	In/Out
C28	FP13	LED Set for front panel	In
C27	FP16	Read/Write for front panel	In
C26	FP19	Enable for front panel	In
C25	FP22	Ground for front panel	---
C24	PRDY	Engine Ready	Out
C23	NVD3[K]	Video Data 3 for Black	In
C22	NVD1[K]	Video Data 1 for Black	In
C21	DCLK[K]	Video Clock for Black	In
C20	GND	Ground	---
C19	NVD3[C]	Video Data 3 for Cyan	In
C18	NVD1[C]	Video Data 1 for Cyan	In
C17	DCLK[C]	Video Clock for Cyan	In
C16	GND	Ground	---
C15	NVD3[M]	Video Data 3 for Magenta	In
C14	NVD1[M]	Video Data 1 for Magenta	In
C13	DCLK[M]	Video Clock for Magenta	In
C12	GND	Ground	---
C11	NVD3[Y]	Video Data 3 for Yellow	In
C10	NVD1[Y]	Video Data 1 for Yellow	In
C9	DCLK[Y]	Video Clock for Yellow	In
C8	GND	Ground	---
C7	5VHD	+5V	---
C6	5VA	+5V	---
C5	5VB	+5V	---
C4	5VB	+5V	---
C3	GND	Ground	---
C2	GND	Ground	---
C1	GND	Ground	---

10.2.2.34. CN39 (on engine board) / CN1508 (on ADU Jam detection board)

CN39 (on engine board) / CN1508 (on ADU Jam detection board)

Pin No.		Signal Name	Description	In/Out	
CN39	CN1508			CN39	CN1508
1		GND	Ground	---	
2		ADUNON	ADU Unit Non	In	
3	3	+5V_ADU	+5V	---	---
4	2	GND	Ground	---	---
5	1	NADUJAM	ADU Jam	In	Out

10.2.2.35. CN43 (on engine board)

CN43 Toner Supply Solenoid I/F

Pin No.	Signal Name	Description	In/Out
1	ITON	Solenoid Drive Line	---
2	+24VPWR	+24V	---
3	ITOFF	Solenoid Drive Line	---

10.2.2.36. CN44 (on engine board)

CN44 Fuser Fan I/F

Pin No.	Signal Name	Description	In/Out
1	FANPWR	+24V	---
2	24VGND	Ground	---
3	FSRFNERR	Fuser Fan Error	In

10.2.2.37. CN45, CN46 (on engine board) / CN3301 (on front panel)

CN45, CN46 (on engine board) / CN3301 (on front panel)

Pin No.			Signal Name	Description	In/Out		
CN45	CN46	CN3301			CN45	CN46	CN3301
1		---	FP4	Front Panel Ground	---		---
	1	1	FP5	Front Panel Data 3		In/Out	In/Out
2		2	FP6	Front Panel Data 4	In/Out		In/Out
	2	3	FP7	Front Panel Data 2		In/Out	In/Out
3		4	FP8	Front Panel Data 5	In/Out		In/Out
	3	5	FP9	Front Panel Data 1		In/Out	In/Out
4		6	FP10	Front Panel Data 6	In/Out		In/Out
	4	7	FP11	Front Panel Data 0		In/Out	In/Out
5		8	FP12	Front Panel Data 7	In/Out		In/Out
	5	9	FP13	Front Panel LED Set		Out	In
6		10	FP14	Front Panel Enable 1	Out		In
	6	11	FP15	Front Panel Key Read		Out	In
7		12	FP16	Front Panel Read/Write	Out		In
	7	13	FP17	Front Panel +5V		---	---
8		14	FP18	Front Panel Registor Select	Out		In
	8	15	FP19	Front Panel Enable 2		Out	In
9		16	FP20	Front Panel +5V	---		---
	9	17	FP21	Front Panel Ground		---	---
10		18	FP22	Front Panel Ground	---		---

10.2.3. Other Connectors (on Power Supply Board, IH Board and Color Registration Board)

10.2.3.1. CN1501 (on color registration sensor board) / CN1511 (on waste toner full detection board)

CN1501 (on color registration sensor board)
/ CN1511 (on waste toner full detection board)

Pin No.		Signal Name	Description	In/Out	
CN1501	CN1511			CN1502	CN1511
9	1	TBFUL	Waste Toner Full Detection signal	In	Out
10	2	+5V	+5V	---	---
11	3	5VGND	Ground	---	---

10.2.3.2. CN1513 (on Exit FG Board)

CN1513 (on Exit FG board)

Pin No.	Signal Name	Description	In/Out
1	FG	Flame Ground	---
2	NC	NC	---
3	EXT FG	Flame Ground	---

10.2.3.3. CN2001 (on IH power board)

CN2001 (on IH power board)

Pin No.	Signal Name	Description	In/Out
L	AC1	AC line 1 (Live)	---
None	FG	Frame Ground	---
N	AC2	AC line 2 (Neutral)	---

10.2.3.4. CN2203 (on IH power board)

CN2203 (on IH power board)

Pin No.	Signal Name	Description	In/Out
1	Thermostat	IH Power Thermostat	---
2	NC	NC	---

10.2.3.5. CN2204 (on IH power board)

CN2204 (on IH power board)

Pin No.	Signal Name	Description	In/Out
1	IHCOIL 1	IH Power Coil 1	---
2	NC	NC	---
3	IHCOIL 2	IH Power Coil 2	---

10.2.3.6. CN2501 (on power supply board) / CN2002 (on IH power supply board)

CN2501 (on power supply board) / CN2002 (on IH power supply board)

Pin No.		Signal Name	Description	In/Out
CN2501	CN2002			
1	L	AC1	AC line 1 (Live)	---
2	N	AC2	AC line 2 (Neutral)	---

10.2.3.7. CN2502 (on power supply board) / CN2207 (on IH power supply board)

CN2502 (on power supply board) / CN2207 (on IH power supply board)

Pin No.		Signal Name	Description	In/Out	
CN2502	CN2207			CN2502	CN2207
1	1	DO	A/D Converter Output Data	In	Out
2	2	CS	A/D Converter Chip Select	Out	In
3	3	ZCROS	Zero Cross	In	Out
4	4	CLK	A/D Converter Data Clock	Out	In
5	5	IHON	Zero Cross	In	Out
6	6	DI	A/D Converter Input Data	Out	In
7	7	IHPOWER	+24V	Out	In
8	8	GND	Ground	---	---
9	9	GND	Ground	---	---
10	10	GND	Ground	---	---

10.2.3.8. CN2506 (on power supply board)

CN2506 (on power supply board)

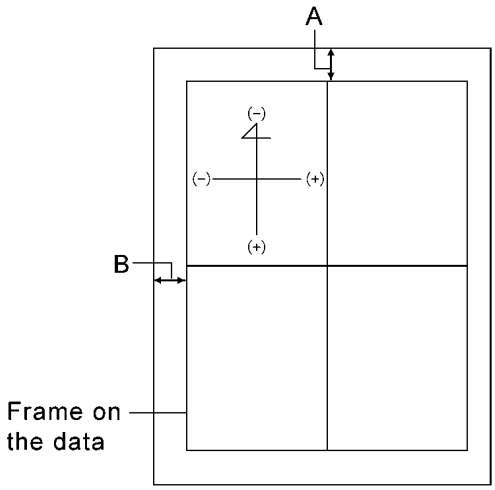
Pin No.	Signal Name	Description	In/Out
1	+24V	+24V	---
2	GND	GND	---
3	+24V	+24V	---

11 Adjustment

11.1. Print Position Calibration

This adjustment is used to set the print position calibration after moving the printer, installing the optional paper feeder, replacing the engine control board or replacing the laser scanning unit (LSU).

1. Turn on the printer and enter the User Mode (or Service Mode).
2. If the User Mode is activated, select “Tray” item menu in the User Mode and press the Enter or Continue button.
3. Select “Position Setting” in the “Tray” item menu (or select “Position Setting” item menu in the Service Mode) and press the Enter or Continue button.
4. Select the Test Print and press the Enter or Continue button.
5. Select the menu which the Print Position Calibration is needed, and press the Enter button. The Test Print is done (see figure-1).
6. Verify that A and B match the values in the following table.
7. If necessary, adjust the Print Position Calibration using “Position Setting” menu in User Mode (or using “Position Setting” item menu in the Service Mode).



(figure-1)

Paper Size	
Any	A=96 dot (0.16", 4.06mm) ±30 (±0.1", ±2.54mm) [600dpi] B=96 dot (0.16", 4.06mm) ±15 * [600dpi]

*

Tray Type	Range
Tray 1, MPT, Duplex	It ranges in size from -0.05" (-1.27 mm) to 0.05" (1.27 mm).
Tray 2, Tray 3	It ranges in size from -0.1" (-2.54 mm) to 0.1" (2.54 mm).

11.2. Color Density Adjustment

This adjustment is used to set the density of the toner applied to the media.

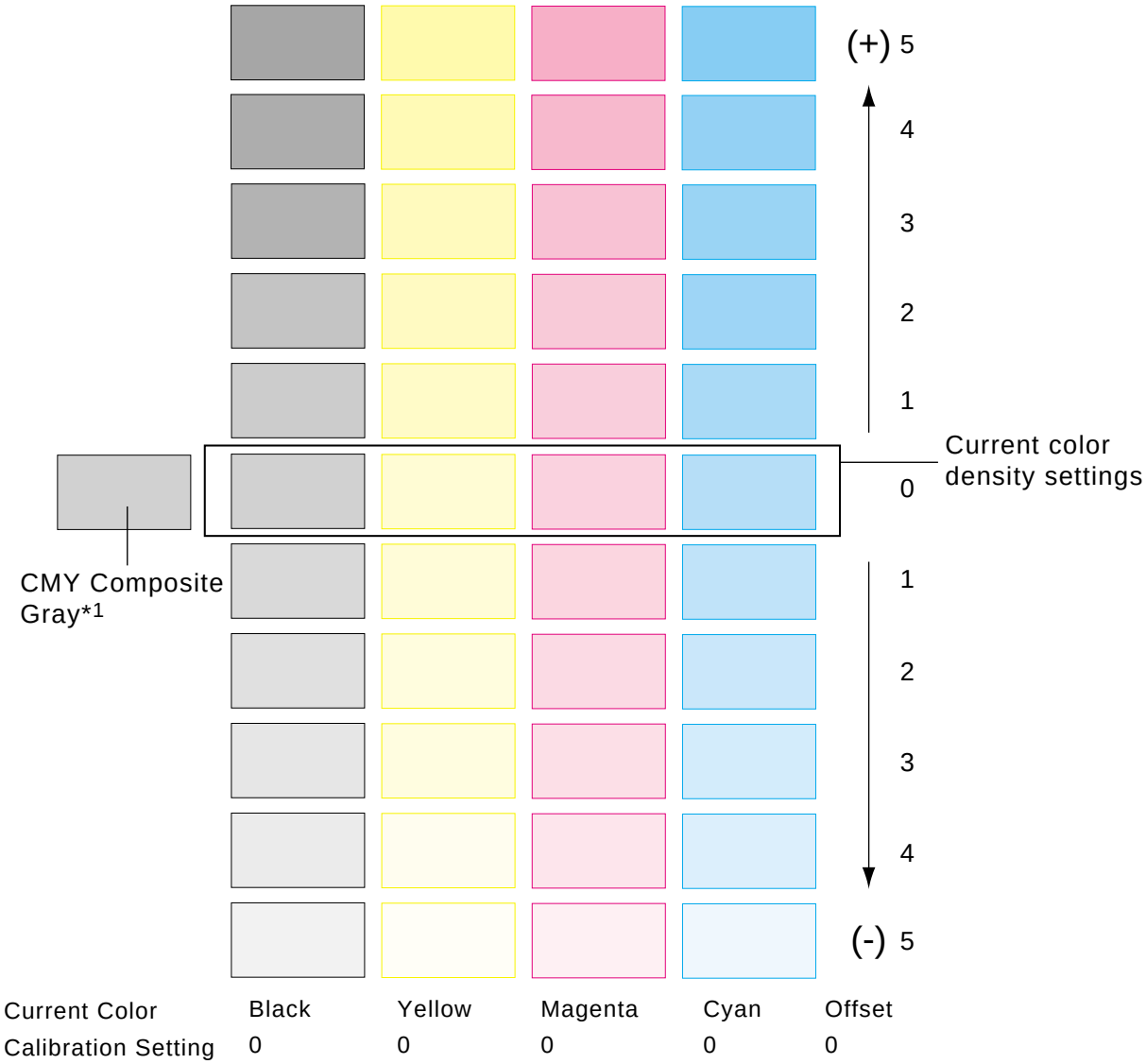
This feature compensates for the changes in density that can occur as environmental conditions change, print cartridges or the accumulator unit age.

1. Print a Color Calibration Test Print Page using the Calib. Test Prn. of Color Calibration menu in the user mode (see section 4.7).

   The current density setting for each color is indicated by the line enclosure on the Color Calibration Test Print Page as shown in the following example.

   The factory default setting for each color density is 0.

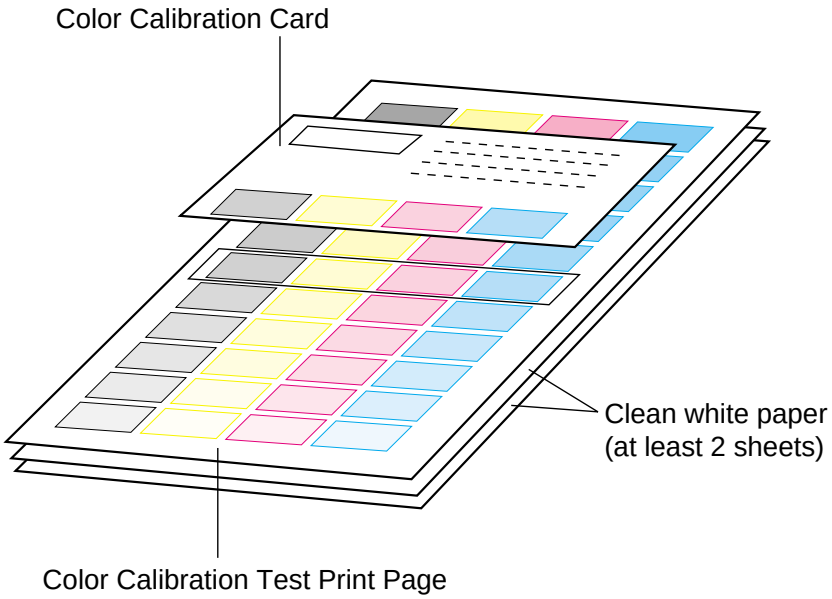
Color Calibration Test Print Page (Example)



*1CMY Composite Gray is the color mixed cyan, magenta and yellow.
If the color calibration is proper, the CMY Composite Gray is near gray.

2. Compare the current color density settings on the Color Calibration Test Print Page with the color density samples on the Color Calibration Card to see if they match.

   Place the Color Calibration Test Print Page on at least 2 sheets of clean white paper in a well-lighted area.



- If they match and CMY Composite Gray is proper, then the color density adjustment is not needed and any operation can be performed.
- If they do not match, go to the next step.

3. Determine which block on the Color Calibration Test Print Page most closely matches the density of the cyan sample on the Color Calibration Card.

   Repeat this step for each color.

4. To adjust the density for all colors simultaneously, perform the following.
   a. Select “Offset” and press the Enter or Continue button.
   b. Press the △ / ▽ button to darken/lighten all the colors, then press the Enter button.
   c. Press the △ button 5 times and select “Calib.Test Prn.”.
   d. Press the Enter button to reprint the Color Calibration Test Print Page.

5. To adjust the density for each color independently, perform the following.
   a. Select “Cyan” and press the Enter or Continue button.
   b. Press the △ / ▽ button to darken/lighten the cyan color, then press the Enter button.
   c. Press the Enter button and repeat instruction b for each color (Magenta, Yellow, Black).
   d. Select “Calib.Test Prn.” and press the Enter button to reprint the Color Calibration Test Print Page.

   The line enclosure reflects the changes made to the settings.

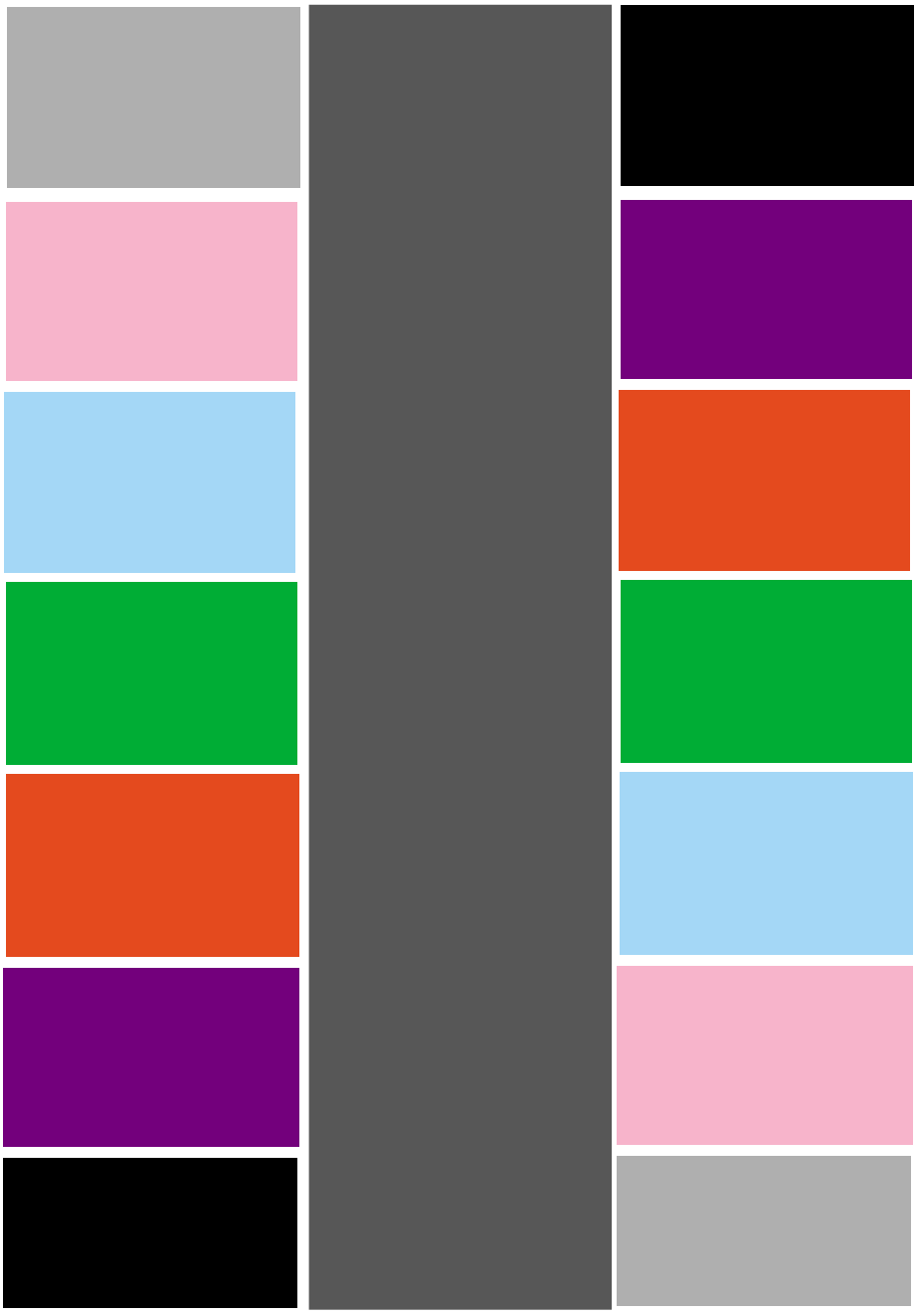
Notes:

- Changes made using Color Calibration are retained until the printer is recalibrated.
- The color density setting affects the average life of the toner.
- Keep the Color Calibration Card for future calibrations.

11.2.1. STR Setting

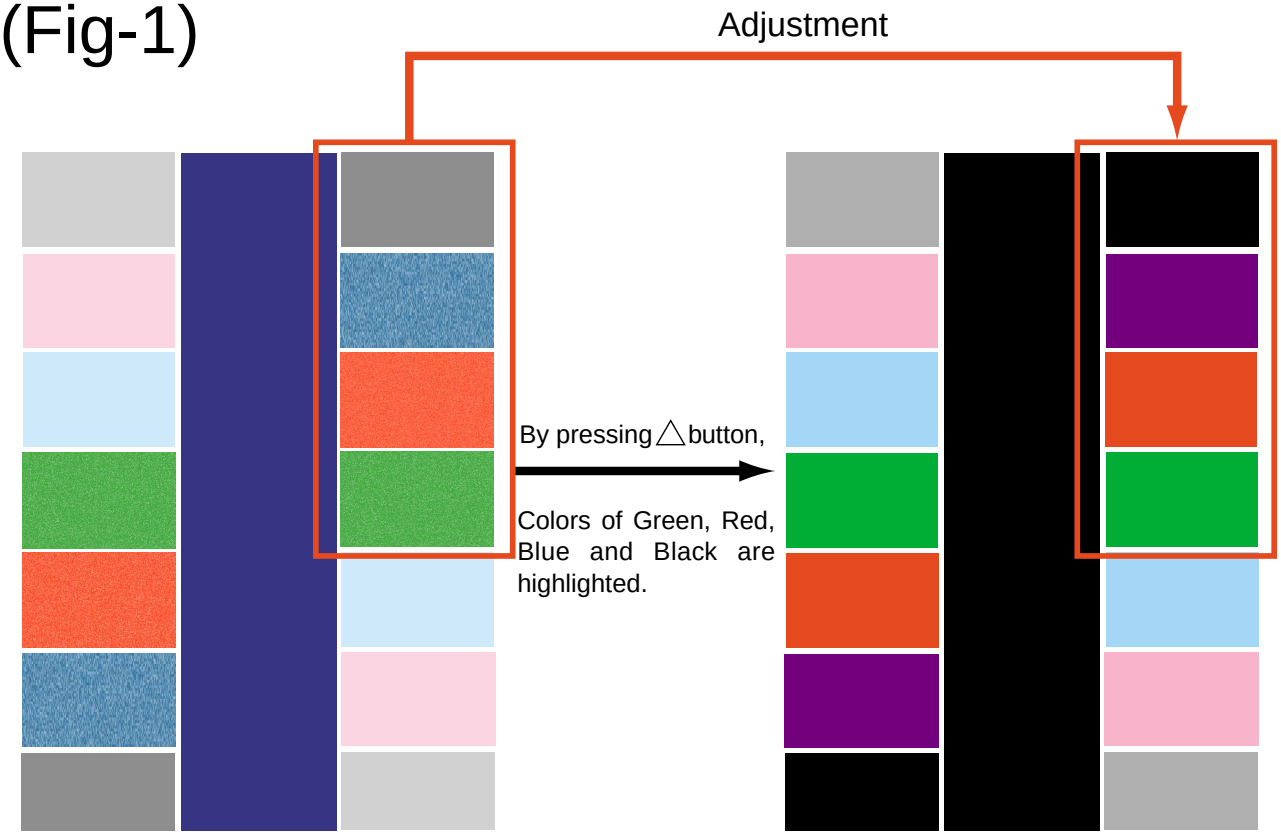
By adjusting the STR bias using this service mode, the transfer performance adjustment for each media type can be performed.

1. To enter the “Service Mode”, turn on the power. Turn on the power while pressing the ▽ and △ buttons at the same time, then keep pressing the ▽ and △ buttons until “**Initializing**” is displayed.
2. Press the Menu/Exit button, select “STR Setting” by pressing △ / ▽ button, and Enter or Continue button.
3. Select “STR Test Print”, press the Enter button, select the media needed the transfer performance adjustment, and then Enter button to print. The color chart as shown in the following is printed.

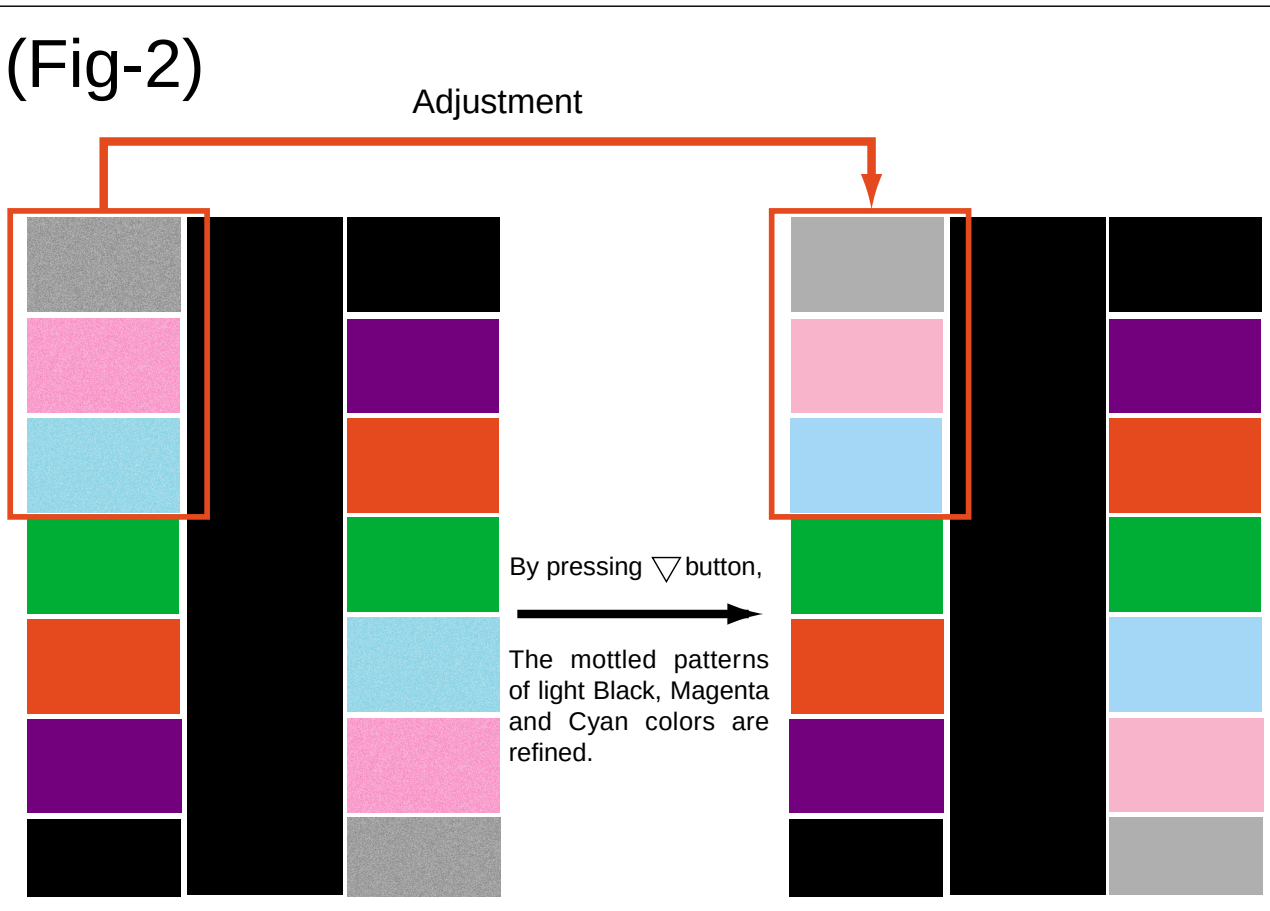


4. See the print page. If the adjustment is necessary, set the value of STR bias by pressing the △ / ▽ button to adjust the print quality. When the number of STR bias is increased, the Green, Red and Blue colors are highlighted (see fig-1). When the number is decreased, the mottled patterns of light Black, Magenta and Cyan colors are refined (see fig-2).

(Fig-1)



(Fig-2)

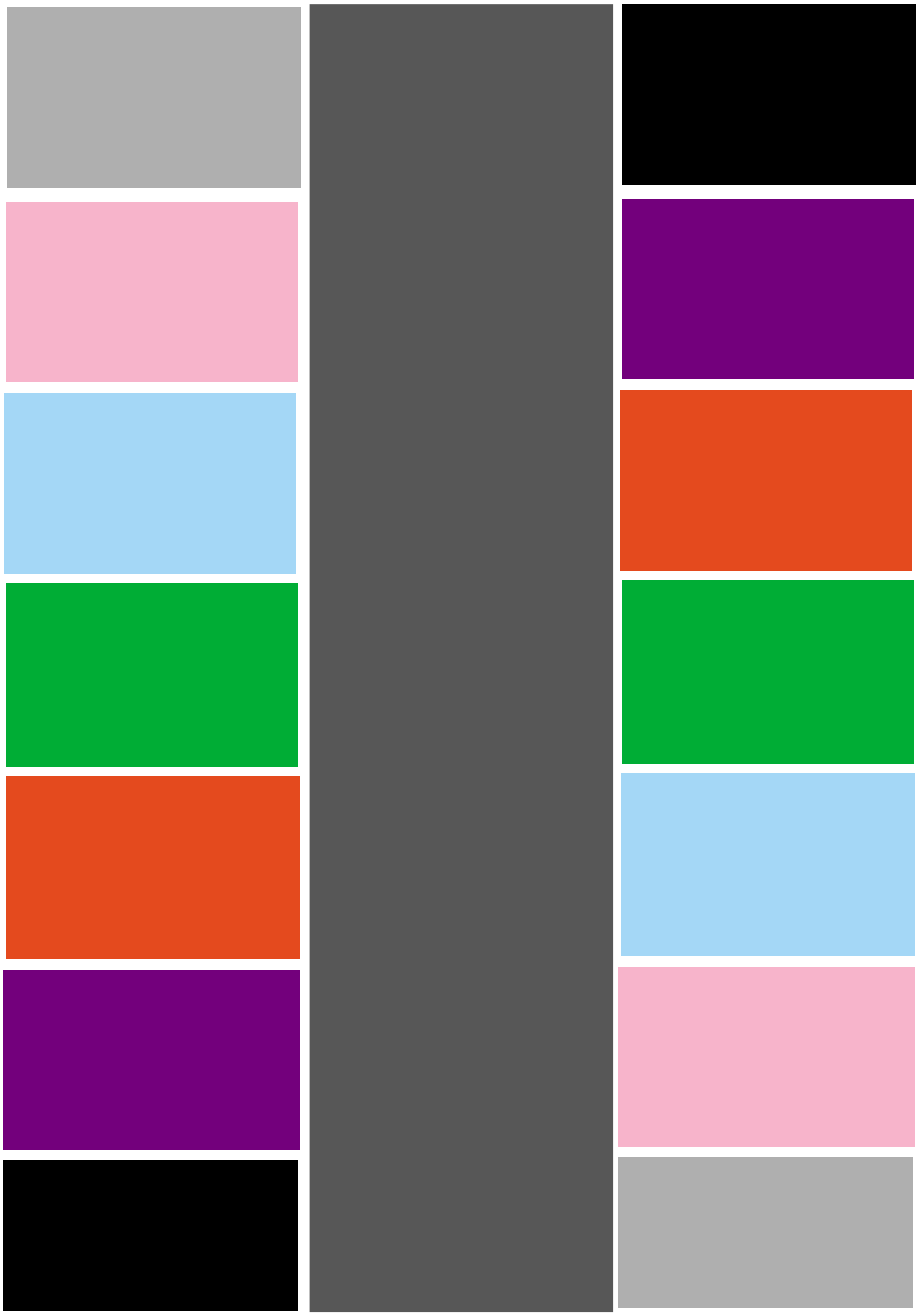


5. Reprint and check the page. If necessary, readjust.

11.2.2. Dev. Bias Setting

By adjusting the Dev. bias using this service mode after the color density adjustment, a range of dark & light color adjustment for each following media type is expanded from (-5 to +5) to (-10 to +10). When performing this adjustment, use the following test print pattern, Color Calibration Test Print or user's unique test pattern.

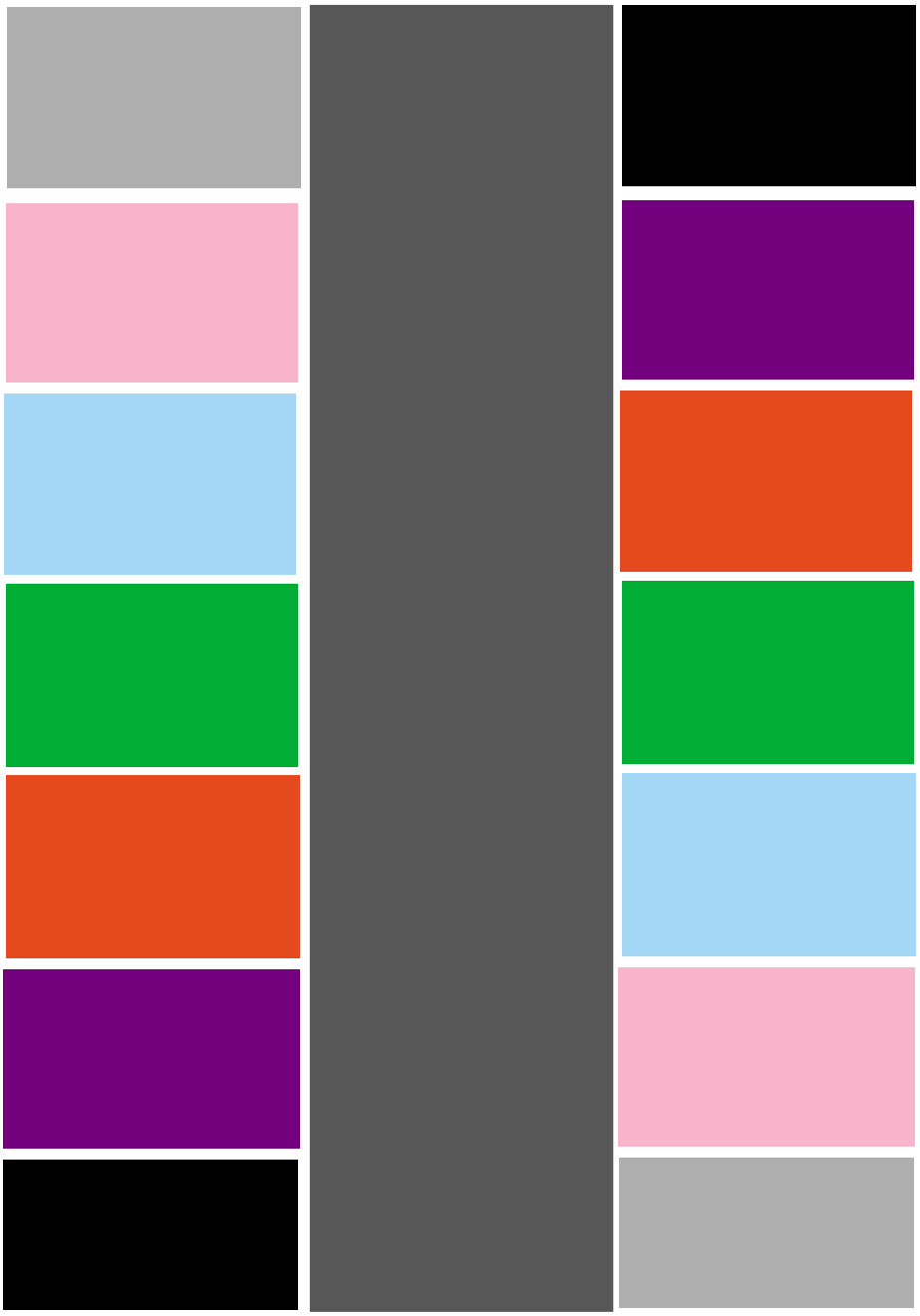
1. To enter the "Service Mode", turn on the power. Turn on the power while pressing the ▽ and △ buttons at the same time, then keep pressing the ▽ and △ buttons until "**Initializing**" is displayed.
2. Press the Menu/Exit button, select "DEV. Bias Setting" by pressing △ / ▽ button, press the Enter or Continue button, select the "Paper/Other" (or "Transparency") and press the Enter or Continue button.
3. Select "Dev. Test Print", press the Enter button, and then Enter button to print. The color chart as shown in the following is printed.



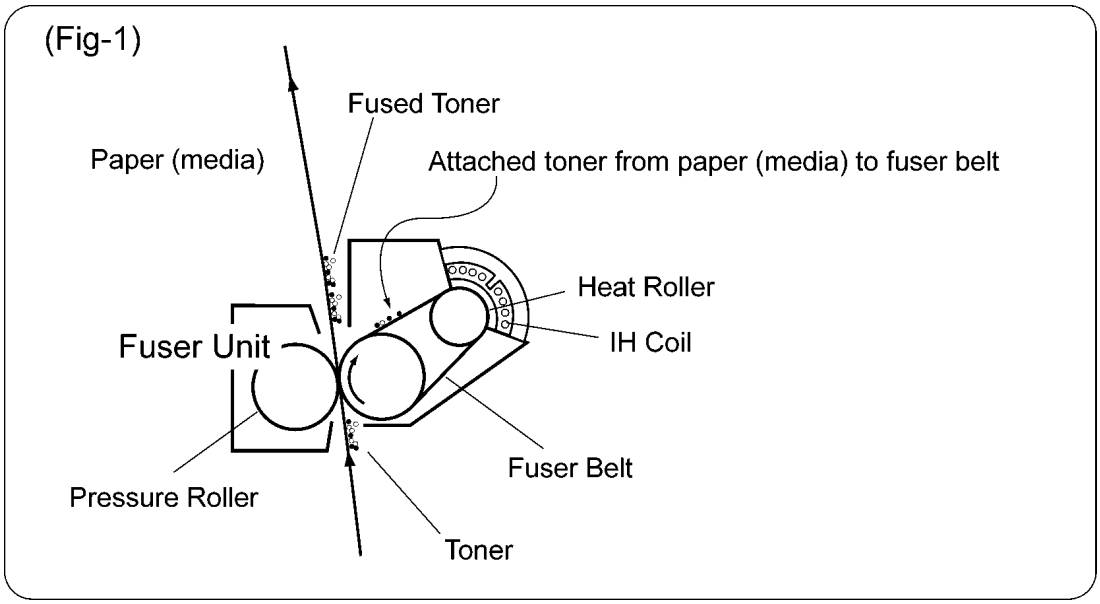
4. See the print page. If the adjustment is necessary, set the value of Dev. bias by pressing the △ / ▽ button to adjust the dark & light of color. When the number of Dev. bias is increased, the color becomes the dark. When the number is decreased, the color becomes the light.
5. Reprint and check the page. If necessary, readjust.

11.2.3. FSR Temp. Setting

1. To enter the “Service Mode”, turn on the power. Turn on the power while pressing the ▽ and △ buttons at the same time, then keep pressing the ▽ and △ buttons until “**Initializing**” is displayed.
2. Press the Menu/Exit button, select “FSR Temp. Setting” by pressing △ / ▽ button, and Enter or continue button.
3. Select the media type by pressing △ / ▽ button, and Enter or continue button.
4. Set the value of FSR Temp. Setting by pressing the △ / ▽ button. The fusing temperature increases (decreases) by approximately +1°C (-1°C) every +1 (-1). If the phenomenon as the example 1 happens, increase the fusing temperature by pressing the △ button. If the phenomenon as the example 2 happens, decrease the fusing temperature by pressing the ▽ button. When performing this adjustment, use the following test print pattern or user’s unique test pattern.
5. Select “Temp. Test Prn.”, press the Enter button, select the media needed the fine temperature adjustment, and then Enter button to print. The color chart as shown in the following is printed. Check the print quality. If necessary, readjust.

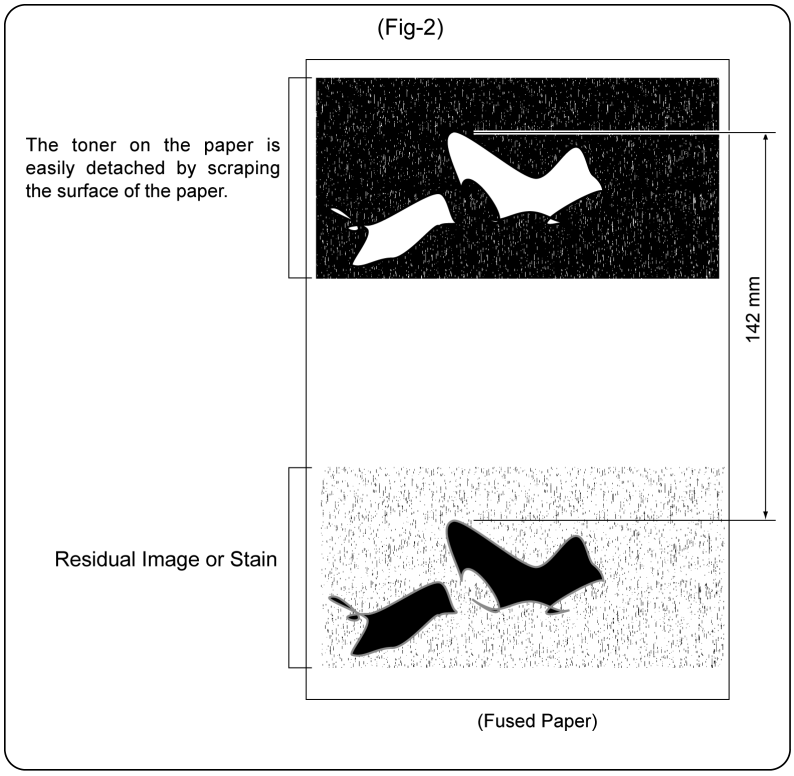


Example



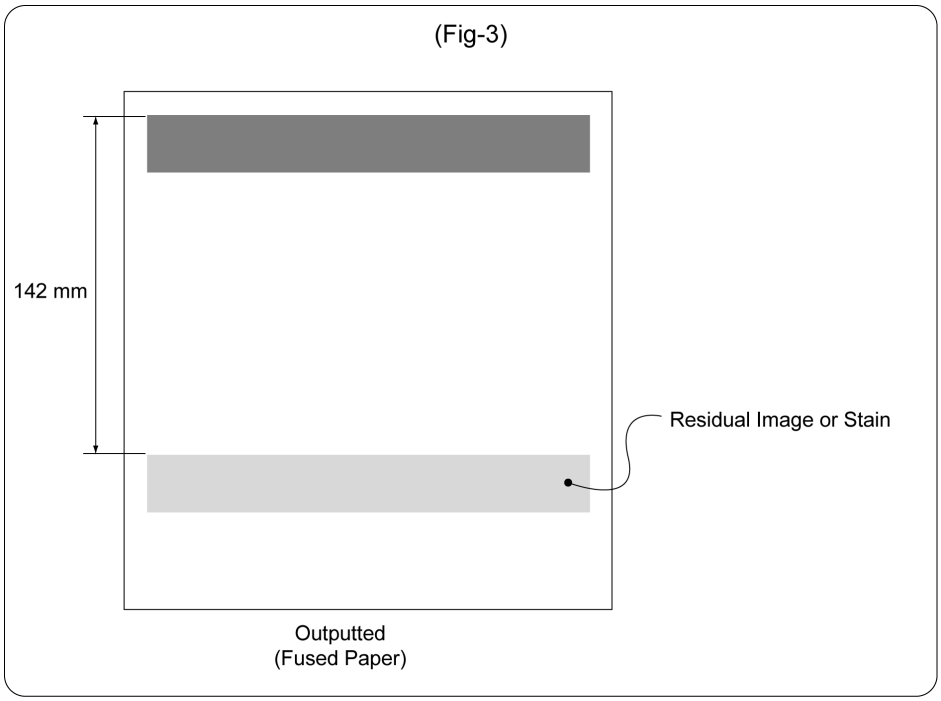
(Example 1) If fusing temperature is not enough:

If the fusing temperature is not enough to fuse the toner, the toner is easily detached from the paper because the toner is not completely fused to the paper. In particular, a thick part of toner is detached easily. The detached toner from the paper attaches to the fuser belt (see above figure; Fig-1), and the detached toner may be fused to the paper as the residual image (or stain) after one cycle of fuser belt rotation.

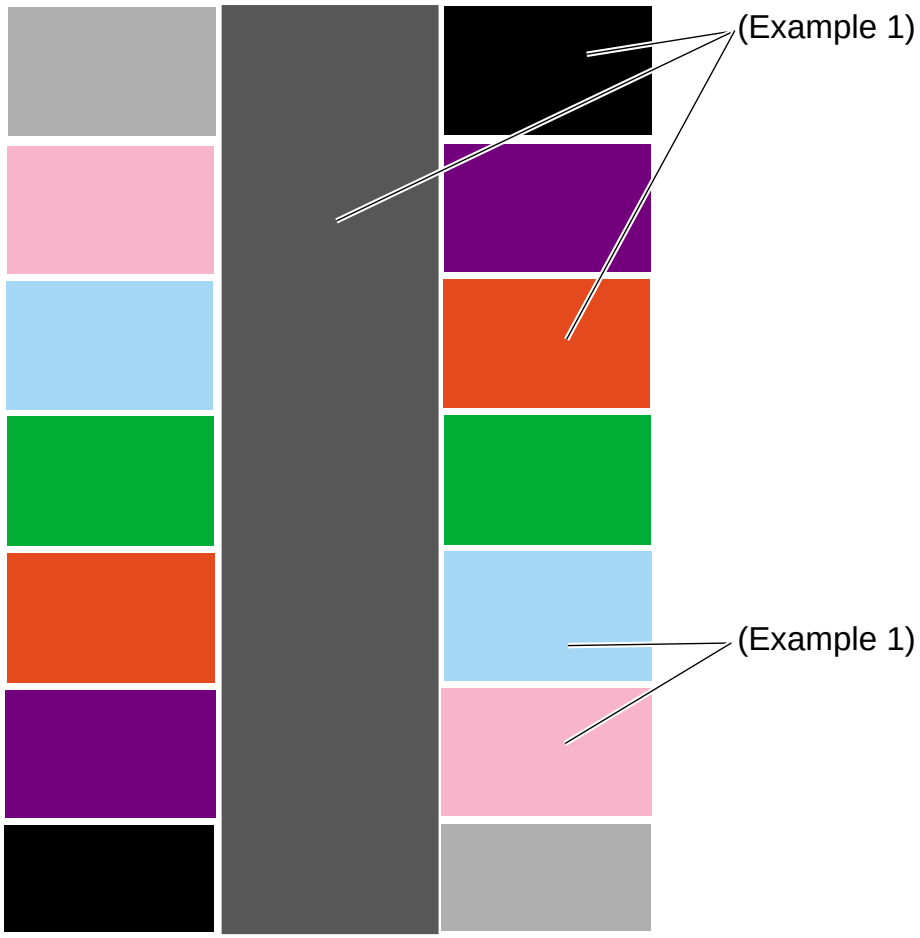

(Fig-2)
The toner on the paper is easily detached by scraping the surface of the paper.
142 mm
Residual Image or Stain
(Fused Paper)

(Example 2) If toner is overheated:

If the toner is overheated, part of the toner on the paper is transferred to the fuser belt without causing the toner detachment on the outputted (fused paper) as shown below (Fig-3) and the transferred toner will be fused to the paper as the residual image (or stain) after one cycle (142 mm) of fuser belt rotation. In particularly, this phenomenon will happen when fusing the image that is made from relatively little toner as a single color (black, magenta, yellow, cyan), half-tone, etc.



The above phenomenon(s) is (are) observed at the following parts on the color chart. When the fuser temperature is high or low, the above phenomenon(s) will occur.



11.3. Skew Adjustment

When performing the following, this adjustment must be done.

- Replace LSU or Print Cartridge Unit Holder
- Reassemble Print Cartridge Holder and reinstall it

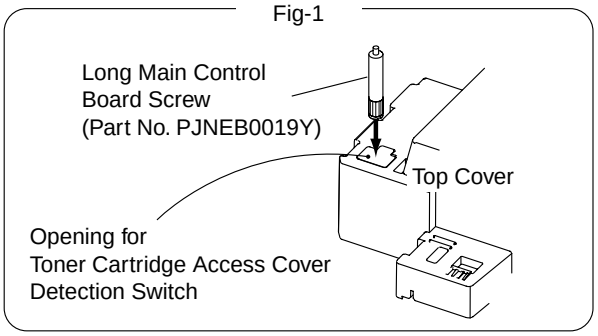
11.3.1. Check of Skew

Check of Skew

(1) Remove the left and rear covers (see section 8.5. Rear, Left and Top Covers).

(2) Turn on the toner cartridge access cover detection switch by inserting a long main control board screw into the opening as shown below (Fig-1).

Fig-1



(3) Push the switch S1 (self print button : see the following Fig-2) on the engine control board. The print job is done, and a skew check pattern is printed as shown below (Fig-3).

(4) Check the skew check pattern using a magnifying glass.
If a black line is in between 3 color lines [Area (A)], it is good. If not so, the skew adjustment must be performed. See section 11.3.2 "Skew Adjustment".

Fig-2

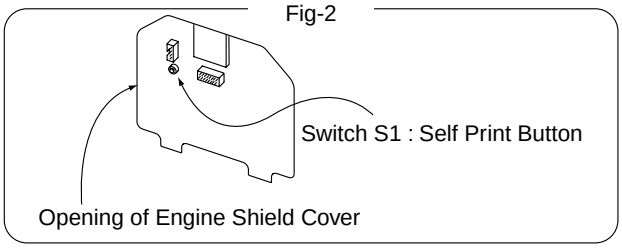
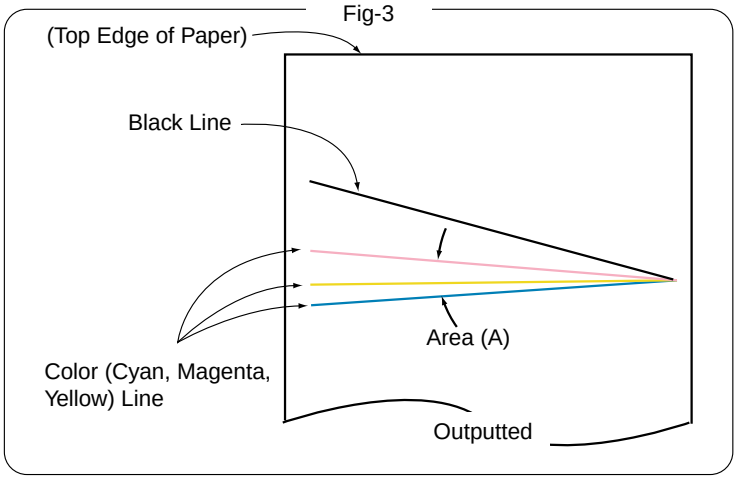


Fig-3



(5) If the skew is good, reinstall the access panel, left cover, rear cover and long main control board screw.

11.3.2. Skew Adjustment

Skew Adjustment

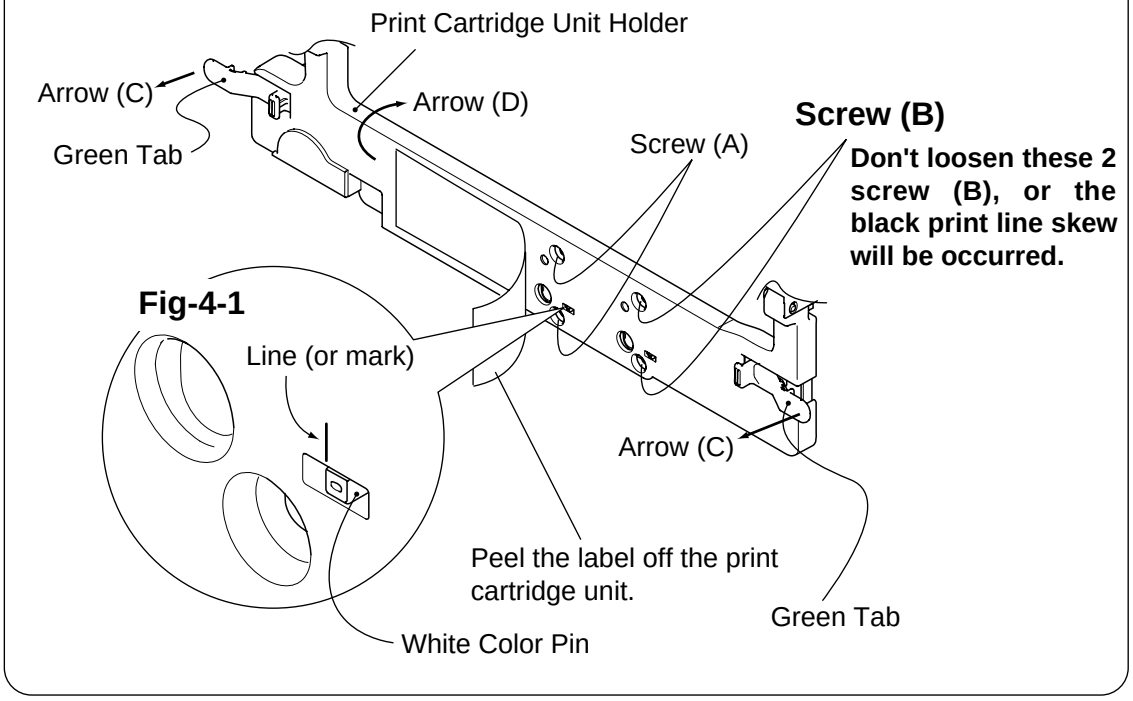
(1) Open the right cover.

(2) Peel the label off the print cartridge unit holder.
Draw (or mark) a line on the print cartridge unit Holder aligning a white color pin as shown below (Fig-4 and Fig-4-1).

(3) Loosen the 2 screw (A). [**Don't loosen the 2 screw (B), or the black print line skew will be occurred.**]

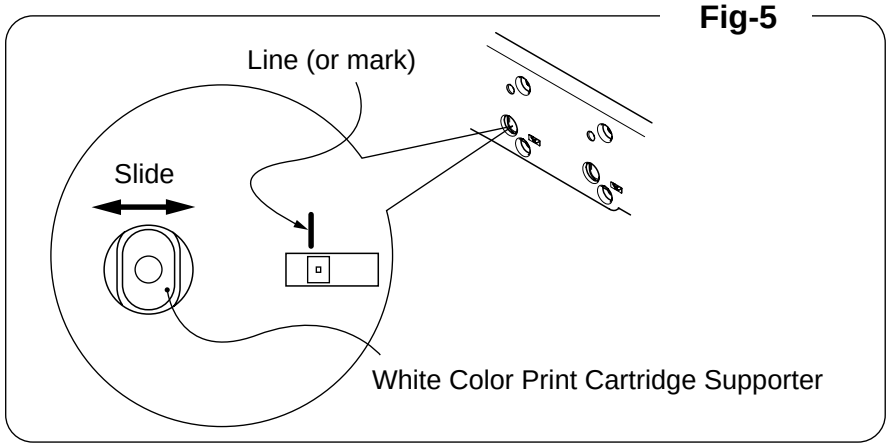
(4) Unlatch the 2 green tabs by pulling the tab in the Arrow (C) direction, then release the print cartridge unit holder from the print cartridge by moving it in the Arrow (D) direction.

Fig-4



(5) Slide the white color print cartridge supporter slightly to the left or right using a small driver as shown below (Fig-5).

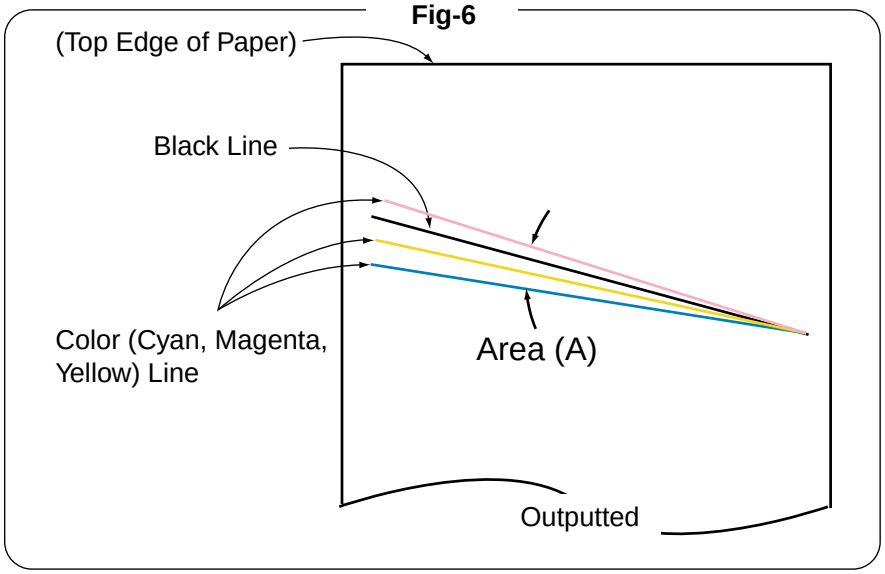
Fig-5



(6) Tighten the 2 screws and latch the print cartridge unit holder.

(7) Perform the steps (4) and (5) in section 13.3.1 "Check of Skew". Make sure that the black line is in between 3 color lines [Area (A)] as shown below (Fig-6). If the skew is good, reinstall the access panel, left cover, rear cover and long main board screw. If not, repeat the steps (3) ~ (7).

Fig-6



12 Preventative Maintenance

12.1. General

Regularly scheduled cleaning is not necessary for this printer. However, if the printer experiences frequent media jams, clean the pickup rollers.

12.2. Recommended Tools

The following tools are recommended.

1) Toner Vacuum Cleaner
2) Puff (Air Blower)
3) Cleaning water
4) Lint-free wipes
5) Cotton swabs
6) Shipping cover of the Print Cartridge (for Black and Color)
7) Isopropyl alcohol (greater than 90% pure)

12.3. Recommend Cleaning

1) Turn off the printer.
2) Remove the waste toner cartridge.
3) Remove the print cartridge.
4) Remove the accumulator unit.
   Do not touch the accumulator belt surface.
5) Remove the fuser unit.
6) Slide out the standard paper cassette.
7) Clean the paper path.
8) Clean all printer rollers, except the 2nd transfer roller, with alcohol-dampened wipes only.
   never apply alcohol on the 2nd transfer roller.
9) Clean the laser unit widows with puffs of air from the suction bulb.
10) Vacuum the interior of the printer.
11) Carefully clean the area surrounding the 2nd transfer roller for impacted toner.
    a. Remove the 2nd transfer roller.
    b. Vacuum the toner and dust, cleaning the area surrounding the 2nd transfer roller.

12.4. Maintenance Tables

12.4.1. User Maintenance

The following table lists the user replaceable components and the symptoms that may result when they need to be replaced.

Printer Component	Front Panel Message	Average Life *	Symptom
Toner Cartridge	"Low <Color> Toner " Have the <color> toner cartridge available. "TC-* Replace" (* indicates C, M, Y or K) Replace the ** toner cartridge. (** indicates Cyan, Magenta, Yellow or Black)	6,000 pages (Y, M, C, BK)** 3,000 pages (Y, M, C)	Uneven, streaky or mottled color.
Print Cartridge	"PC-* wearing out " Have the * Print Cartridge. (* indicates Color or Black)	15,000 pages (Color, BK)	Dark vertical streaks on the print. Dark color spots and streaks in all colors. A wide, light, horizontal band in one place on the page. All colors are faded; fine line detail disappears.
	"PC-* Replace " (* indicates Color or Black) Replace the* Print Cartridge.	15,000 pages (Color, BK)	
Waste Toner Cartridge	"WTC Full " Have the Waste Toner Cartridge available.	----	
	"WTC Replace " Replace the Waste Toner Cartridge.	14,000 pages/Full color	
Fuser Unit	"FSR wearing out " Have the Fuser Unit available.	99,250 pages	
	"FSR Replace " Replace the Fuser Unit.	100,000 pages	
Accumulator Unit	"AU wearing out " Have the Accumulator Unit available.	99,250 pages	
	"AU Replace" Replace the Accumulator Unit.	100,000 pages	
Transfer Roller	"TR wearing out " Have the Transfer Roller available.	99,250 pages	
	"TR Replace " Replace the Transfer Roller.	100,000 pages	
MPT Pad	---	30,000 pages	Miss Feed

Note * The rated life expectancy of each consumable is based on printing under specific operating conditions such as page coverage for a particular page size (5% coverage per color at 600 x 600 dpi resolution on A4 size paper).The actual consumable, life will vary depending on its use and other printing variables including page coverage, page size, media type, print resolution, continuous or intermittent printing, number of color planes, ambient, temperature and humidity.

When printing at the High Density, after "Low <Color> Toner "is displayed, a faded print may occur before "TC-* Replace"is displayed. (* indicates C, M, Y or K)

** The Starter Toner Cartridges shipped with the printer have an average life of approximately 2,500 pages based on an average of 5% coverage of A4 in continuous printing.

12.4.2. Service Maintenance

12.4.2.1. Recommended Maintenance Cycle

Item		Maintenance Cycle	Type of Maintenance
Paper Feed Unit	Pickup Roller	Approximately 50,000 pages	Clean
Multi-Purpose Tray	Pickup Roller Delay Pad	Approximately 50,000 pages	Clean
Main Unit	Paper Chute Registration Roller Inside of the printer *	Approximately 50,000 pages	Clean

* Cleaning is recommended when replacing the Print Cartridge and Accumulator Unit.

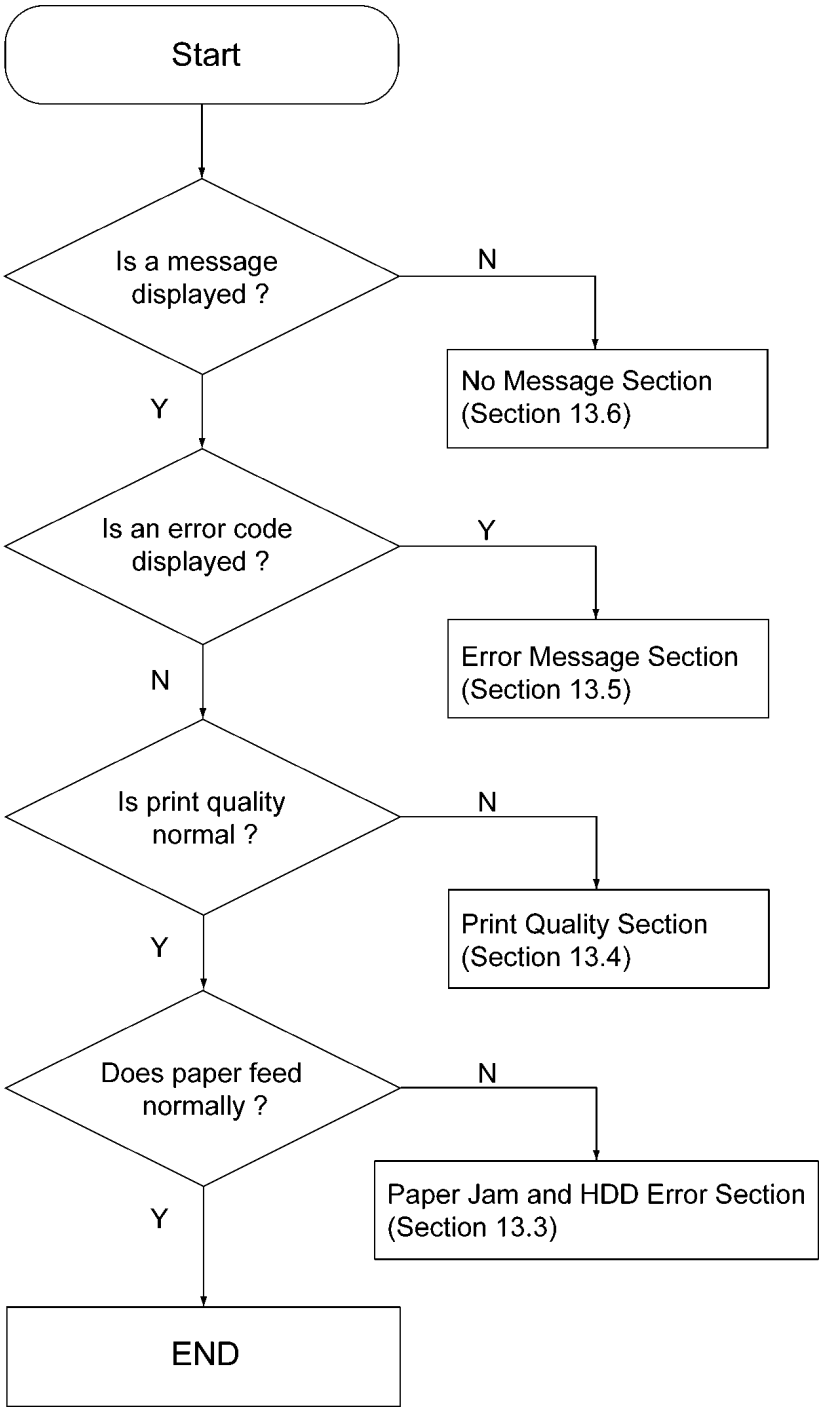
12.4.2.2. Lubrication

Area	Part	Lubricant Part Number	Type of Lubricant
Main Drive Unit	Gear and Gear Shafts	PJOL-YM-103	Grease
Accumulator Drive Unit	FTR Cam (4 pieces)	PJOL-YM-103	Grease
	Planetary Gear Base (B)	PJOL-YM-103	Grease
Paper Exit Roller	Roller Supporting Portion	PJOL-YM-103	Grease

Regarding the lubrication point, refer to the section 14 "Replacement Parts with Lubrication Guide".

13 Troubleshooting

13.1. Initial Troubleshooting Flowchart



13.2. Warning/Error Message

13.2.1. Warning Message

Message on LCD	Possible Cause	Recovery
Low Cyan Toner	Cyan toner cartridge is almost empty.	Have the cyan toner cartridge available.
Low Magenta Toner	Magenta toner cartridge is almost empty.	Have the magenta toner cartridge available.
Low Yellow Toner	Yellow toner cartridge is almost empty.	Have the yellow toner cartridge available.
Low Black Toner	Black toner cartridge is almost empty.	Have the black toner cartridge available.
WTC Full	Waste toner cartridge is near full.	Have the waste toner cartridge available.
PC-Black wearing out	Black print cartridge is wearing out.	Have the black print cartridge available.
PC-Color wearing out	Color print cartridge is wearing out.	Have the color print cartridge available.
PC-Black Replace	Black print cartridge is worn out.	Replace the black print cartridge.
PC-Color Replace	Color print cartridge is worn out.	Replace the color print cartridge.
AU wearing out	Accumulator unit is wearing out.	Have the accumulator unit available.
TR wearing out	Transfer roller is wearing out.	Have the transfer roller available.
FSR wearing out	Fuser unit is wearing out.	Have the fuser unit available.
TC-C Replace	Cyan toner cartridge is empty.	Replace the cyan toner cartridge.
TC-M Replace	Magenta toner cartridge is empty.	Replace the magenta toner cartridge.
TC-Y Replace	Yellow toner cartridge is empty.	Replace the yellow toner cartridge.
TC-K Replace	Black toner cartridge is empty.	Replace the black toner cartridge.
Tray1 Empty	Tray 1 is empty.	Load media in tray 1.
Tray1 not installed	Tray 1 is not installed.	Install tray 1.
Tray2 Empty	Tray 2 is empty.	Load media in tray 2.
Tray2 not installed	Tray 2 is not installed.	Install tray 2.
Tray3 Empty	Tray 3 is empty.	Load media in tray 3.
Tray3 not installed	Tray 3 is not installed.	Install tray 3.
HDD Full	Hard disk drive is full.	Remove the unnecessary files from the hard disk drive.
HDD I/O Error	HDD I/O Error has occurred.	Perform Check Disk operation in the HDD Maintenance mode. If it still remains, perform Quick Format or HDD Format operation in the HDD Maintenance mode.

13.2.2. User Errors

Message on LCD	Possible Cause	Recovery
Output Tray Full	Output tray is full.	Remove the printed media from the output tray.
Memory Overflow	There is not enough memory in the printer.	Add memory or select a lower resolution in the printer driver.
HDD I/O Error	HDD I/O error has occurred.	Perform Check Disk operation in the HDD Maintenance mode. If it still remains, perform Quick Format or HDD Format operation in the HDD Maintenance mode.
FSR Not Installed	Fuser unit is not installed.	Install the fuser unit.
TC-C Not Installed	Cyan toner cartridge is not installed.	Install the cyan toner cartridge.
TC-M Not Installed	Magenta toner cartridge is not installed.	Install the magenta toner cartridge.
TC-Y Not Installed	Yellow toner cartridge is not installed.	Install the yellow toner cartridge.
TC-K Not Installed	Black toner cartridge is not installed.	Install the black toner cartridge.
WTC Replace	Waste toner cartridge is full.	Replace the waste toner cartridge.
PC-Black Not Installed	Black print cartridge is not installed.	Install the black print cartridge.
PC-Color Not Installed	Color print cartridge is not installed.	Install the color print cartridge.
PC-Black Replace	Black print cartridge is worn out.	Replace Black print cartridge.
PC-Color Replace	Color print cartridge is worn out.	Replace Color print cartridge.
FSR Replace	Fuser unit is worn out.	Replace the fuser unit.
TR Replace	Transfer roller is worn out.	Replace the transfer roller.
AU Replace	Accumulator unit is worn out.	Replace the accumulator unit.
Reset Tray1 Remove MPT Paper	Multi-purpose tray is not in closed position.	Remove media from the multi-purpose tray. Uninstall tray1 and then reinstall it.
Front or Right door Open	Front or right side door is open.	Close the front or right side door.
Toner Door Open	Toner door is open.	Close the toner door.
Reset Tray1	Multi-purpose tray motor error has occurred.	Uninstall tray1 and then reinstall it.
Load Letter	Any tray does not contain letter size media.	Load letter size media.

Message on LCD	Possible Cause	Recovery
Load Legal	Any tray does not contain legal size media.	Load legal size media.
Load A4	Any tray does not contain A4 size media.	Load A4 size media.
Load B5 (JIS)	Any tray does not contain B5 (JIS) size media.	Load B5 (JIS) size media.
All Media Tray Empty	All trays that are possible to feed media are empty. If the upper tray is not installed when optional paper feeder(s) is (are) installed, it is impossible to feed media from the lower tray.	Load media in a media tray (not to be the multi-purpose tray).
Load Letter in Tray1	Letter size media is not loaded in tray 1.	Load letter size media in tray 1.
Load Legal in Tray1	Legal size media is not loaded in tray 1.	Load legal size media in tray 1.
Load A4 in Tray1	A4 size media is not loaded in tray 1.	Load A4 size media in tray 1.
Load B5 (JIS) in Tray1	B5 (JIS) size media is not loaded in tray 1.	Load B5 (JIS) size media in tray 1.
Tray 1 Not Installed	Tray 1 is not installed.	Install tray 1.
Tray 1 Empty	Tray 1 is empty.	Load media in tray 1.
Load Letter in Tray2	Letter size media is not loaded in tray 2.	Load letter size media in tray 2.
Load Legal in Tray2	Legal size media is not loaded in tray 2.	Load legal size media in tray 2.
Load A4 in Tray2	A4 size media is not loaded in tray 2.	Load A4 size media in tray 2.
Load B5 (JIS) in Tray2	B5 (JIS) size media is not loaded in tray 2.	Load B5 (JIS) size media in tray 2.
Tray 2 Not Installed	Tray 2 is not installed.	Install tray 2.
Tray 2 Empty	Tray 2 is empty.	Load media in tray 2.
Load Letter in Tray3	Letter size media is not loaded in tray 3.	Load letter size media in tray 3.
Load Legal in Tray3	Legal size media is not loaded in tray 3.	Load legal size media in tray 3.
Load A4 in Tray3	A4 size media is not loaded in tray 3.	Load A4 size media in tray 3.
Load B5 (JIS) in Tray3	B5 (JIS) size media is not loaded in tray 3.	Load B5 (JIS) size media in tray 3.
Tray 3 Not Installed	Tray 3 is not installed.	Install tray 3.
Tray 3 Empty	Tray 3 is empty.	Load media in tray 3.
JAM1 See front door label	Pickup jam.	Clear media jam. See front door label.

Message on LCD	Possible Cause	Recovery
JAM2 See front door label	Jam at registration sensor.	Clear media jam. See front door label.
JAM3 See front door label	Jam at fuser.	Clear media jam. See front door label.
JAM4 See front door label	Jam at fuser.	Clear media jam. See front door label.
JAM5 See front door label	Jam at fuser.	Clear media jam. See front door label.
JAM9 See front door label	Media size is wrong.	Clear media jam. See front door label. See correct media size.
JAM 21 See front door label	Jam at tray 2.	Clear media jam. See front door label.
JAM 22 See front door label	Jam at tray 3.	Clear media jam. See front door label.
JAM 31 See front door label	Jam at automatic duplex unit.	Clear media jam. See front door label.
JAM32 See front door label	Jam at automatic duplex unit.	Clear media jam. See front door label.
AU/WTC Not Installed	Accumulator unit or waste toner cartridge is not installed.	Install the accumulator unit or the waste toner cartridge.
Letter in MPT Plain Paper	Letter size plain paper is requested in the multi-purpose tray.	Load plain, letter sized plain paper in the multi-purpose tray.
Letter in MPT Thin Paper	Letter size thin paper is requested in the multi-purpose tray.	Load thin, letter sized thin paper in the multi-purpose tray.
Letter in MPT Transparency	Letter size transparency is requested in the multi-purpose tray.	Load transparency, letter sized paper in the multi-purpose tray.
Letter in MPT Label	Letter size label is requested in the multi-purpose tray.	Load label, letter sized paper in the multi-purpose tray.
Letter in MPT Coated Paper	Letter size coated paper is requested in the multi-purpose tray.	Load coated, letter sized paper in the multi-purpose tray.
Letter in MPT Thick Paper	Letter size thick paper is requested in the multi-purpose tray.	Load thick, letter sized paper in the multi-purpose tray.
Letter in MPT Card Stock	Letter size card stock is requested in the multi-purpose tray.	Load card stock, letter sized paper in the multi-purpose tray.
Letter in MPT Envelope	Letter size envelope is requested in the multi-purpose tray.	Load envelope, letter sized envelope in the multi-purpose tray.
Letter in MPT JP Postcard	Letter size JP postcard is requested in the multi-purpose tray.	Load JP postcard, letter sized paper in the multi-purpose tray.
Letter in MPT JP Postcard 2nd	Letter size JP postcard 2nd is requested in the multi-purpose tray.	Load JP postcard 2nd, letter sized paper in the multi-purpose tray.
Letter in MPT Bond/Letterhead	Letter size bond/letterhead is requested in the multi-purpose tray.	Load bond/letterhead, letter sized paper in the multi-purpose tray.

Message on LCD	Possible Cause	Recovery
Letter in MPT Recycled Paper	Letter size recycled paper is requested in the multi-purpose tray.	Load recycled, letter sized paper in the multi-purpose tray.
A4 in MPT Plain Paper	A4 size plain paper is requested in the multi-purpose tray.	Load plain, A4 sized paper in the multi-purpose tray.
A4 in MPT Thin Paper	A4 size thin paper is requested in the multi-purpose tray.	Load thin, A4 sized paper in the multi-purpose tray.
A4 in MPT Thick Paper	A4 size thick paper is requested in the multi-purpose tray.	Load thick, A4 sized paper in the multi-purpose tray.
A4 in MPT Transparency	A4 size transparency is requested in the multi-purpose tray.	Load transparency, A4 sized paper in the multi-purpose tray.
A4 in MPT Label	A4 size label is requested in the multi-purpose tray.	Load label, A4 sized paper in the multi-purpose tray.
A4 in MPT Coated Paper	A4 size coated paper is requested in the multi-purpose tray.	Load coated, A4 sized paper in the multi-purpose tray.
A4 in MPT Card Stock	A4 size card stock is requested in the multi-purpose tray.	Load card stock, A4 sized paper in the multi-purpose tray.
A4 in MPT Envelope	A4 size envelope is requested in the multi-purpose tray.	Load envelope, A4 sized envelope in the multi-purpose tray.
A4 in MPT JP Postcard	A4 size JP postcard is requested in the multi-purpose tray.	Load JP postcard, A4 sized paper in the multi-purpose tray.
A4 in MPT JP Postcard 2nd	A4 size JP postcard 2nd is requested in the multi-purpose tray.	Load JP postcard 2nd, A4 sized paper in the multi-purpose tray.
A4 in MPT Bond/Letterhead	A4 size bond/letterhead is requested in the multi-purpose tray.	Load bond/letterhead, A4 sized paper in the multi-purpose tray.
A4 in MPT Recycled Paper	A4 size recycled paper is requested in the multi-purpose tray.	Load recycled, A4 sized paper in the multi-purpose tray.
Legal in MPT Plain Paper	Legal size plain paper is requested in the multi-purpose tray.	Load plain, legal sized paper in the multi-purpose tray.
Legal in MPT Thin Paper	Legal size thin paper is requested in the multi-purpose tray.	Load thin, legal sized paper in the multi-purpose tray.
Legal in MPT Transparency	Legal size transparency is requested in the multi-purpose tray.	Load transparency, legal sized paper in the multi-purpose tray.
Legal in MPT Label	Legal size label is requested in the multi-purpose tray.	Load label, legal sized paper in the multi-purpose tray.
Legal in MPT Coated Paper	Legal size coated paper is requested in the multi-purpose tray.	Load coated, legal sized paper in the multi-purpose tray.
Legal in MPT Thick Paper	Legal size thick paper is requested in the multi-purpose tray.	Load thick, legal sized paper in the multi-purpose tray.
Legal in MPT Card Stock	Legal size card stock is requested in the multi-purpose tray.	Load card stock, legal sized paper in the multi-purpose tray.
Legal in MPT Envelope	Legal size envelope is requested in the multi-purpose tray.	Load envelope, legal sized envelope in the multi-purpose tray.
Legal in MPT JP Postcard	Legal size JP postcard is requested in the multi-purpose tray.	Load JP postcard, legal sized paper in the multi-purpose tray.

Message on LCD	Possible Cause	Recovery
Legal in MPT JP Postcard 2nd	Legal size JP postcard 2nd is requested in the multi-purpose tray.	Load JP postcard 2nd, Legal sized paper in the multi-purpose tray.
Legal in MPT Bond/Letterhead	Legal size bond/letterhead is requested in the multi-purpose tray.	Load bond/letterhead, legal sized paper in the multi-purpose tray.
Legal in MPT Recycled Paper	Legal size recycled paper is requested in the multi-purpose tray.	Load recycled, legal sized paper in the multi-purpose tray.
B5 (JIS) in MPT Plain Paper	B5 (JIS) size plain paper is requested in the multi-purpose tray.	Load plain, B5 (JIS) sized paper in the multi-purpose tray.
B5 (JIS) in MPT Thin Paper	B5 (JIS) size thin paper is requested in the multi-purpose tray.	Load thin, B5 (JIS) sized paper in the multi-purpose tray.
B5 (JIS) in MPT Transparency	B5 (JIS) size transparency is requested in the multi-purpose tray.	Load transparency, B5 (JIS) sized paper in the multi-purpose tray.
B5 (JIS) in MPT Label	B5 (JIS) size label is requested in the multi-purpose tray.	Load label, B5 (JIS) sized paper in the multi-purpose tray.
B5 (JIS) in MPT Coated Paper	B5 (JIS) size coated paper is requested in the multi-purpose tray.	Load coated, B5 (JIS) sized paper in the multi-purpose tray.
B5 (JIS) in MPT Thick Paper	B5 (JIS) size thick paper is requested in the multi-purpose tray.	Load thick, B5 (JIS) sized paper in the multi-purpose tray.
B5 (JIS) in MPT Card Stock	B5 (JIS) size card stock is requested in the multi-purpose tray.	Load card stock, B5 (JIS) sized paper in the multi-purpose tray.
B5 (JIS) in MPT Envelope	B5 (JIS) size envelope is requested in the multi-purpose tray.	Load envelope, B5 (JIS) sized envelope in the multi-purpose tray.
B5 (JIS) in MPT JP Postcard	B5 (JIS) size JP postcard is requested in the multi-purpose tray.	Load JP postcard, B5 (JIS) sized paper in the multi-purpose tray.
B5 (JIS) in MPT JP Postcard 2nd	B5 (JIS) size JP postcard 2nd is requested in the multi-purpose tray.	Load JP postcard 2nd, B5 (JIS) sized paper in the multi-purpose tray.
B5 (JIS) in MPT Bond/Letterhead	B5 (JIS) size bond/letterhead is requested in the multi-purpose tray.	Load bond/letterhead, B5 (JIS) sized paper in the multi-purpose tray.
B5 (JIS) in MPT Recycled Paper	B5 (JIS) size recycled paper is requested in the multi-purpose tray.	Load recycled, B5 (JIS) sized paper in the multi-purpose tray.
A5 in MPT Plain Paper	A5 size plain paper is requested in the multi-purpose tray.	Load plain, A5 sized paper in the multi-purpose tray.
A5 in MPT Thin Paper	A5 size thin paper is requested in the multi-purpose tray.	Load thin, A5 sized paper in the multi-purpose tray.
A5 in MPT Thick Paper	A5 size thick paper is requested in the multi-purpose tray.	Load thick, A5 sized paper in the multi-purpose tray.
A5 in MPT Transparency	A5 size transparency is requested in the multi-purpose tray.	Load transparency, A5 sized paper in the multi-purpose tray.
A5 in MPT Label	A5 size label is requested in the multi-purpose tray.	Load label, A5 sized paper in the multi-purpose tray.
A5 in MPT Coated Paper	A5 size coated paper is requested in the multi-purpose tray.	Load coated, A5 sized paper in the multi-purpose tray.
A5 in MPT Envelope	A5 size envelope is requested in the multi-purpose tray.	Load envelope, A5 sized envelope in the multi-purpose tray.

Message on LCD	Possible Cause	Recovery
A5 in MPT Card Stock	A5 size card stock is requested in the multi-purpose tray.	Load card stock, A5 sized paper in the multi-purpose tray.
A5 in MPT Envelope	A5 size envelope is requested in the multi-purpose tray.	Load envelope, A5 sized envelope in the multi-purpose tray.
A5 in MPT JP Postcard	A5 size JP postcard is requested in the multi-purpose tray.	Load JP postcard, A5 sized paper in the multi-purpose tray.
A5 in MPT JP Postcard 2nd	A5 size JP postcard 2nd is requested in the multi-purpose tray.	Load JP postcard 2nd, A5 sized paper in the multi-purpose tray.
A5 in MPT Bond/Letterhead	A5 size bond/letterhead is requested in the multi-purpose tray.	Load bond/letterhead, A5 sized paper in the multi-purpose tray.
A5 in MPT Recycled Paper	A5 size recycled paper is requested in the multi-purpose tray.	Load recycled, A5 sized paper in the multi-purpose tray.
Executive in MPT Plain Paper	Executive size plain paper is requested in the multi-purpose tray.	Load plain, executive sized paper in the multi-purpose tray.
Executive in MPT Thin Paper	Executive size thin paper is requested in the multi-purpose tray.	Load thin, executive sized paper in the multi-purpose tray.
Executive in MPT Transparency	Executive size transparency is requested in the multi-purpose tray.	Load transparency, executive sized paper in the multi-purpose tray.
Executive in MPT Label	Executive size label is requested in the multi-purpose tray.	Load label, executive sized paper in the multi-purpose tray.
Executive in MPT Coated Paper	Executive size coated paper is requested in the multi-purpose tray.	Load coated, executive sized paper in the multi-purpose tray.
Executive in MPT Thick Paper	Executive size thick paper is requested in the multi-purpose tray.	Load thick, executive sized paper in the multi-purpose tray.
Executive in MPT Card Stock	Executive size card stock is requested in the multi-purpose tray.	Load card stock, executive sized paper in the multi-purpose tray.
Executive in MPT Envelope	Executive size envelope is requested in the multi-purpose tray.	Load envelope, executive sized envelope in the multi-purpose tray.
Executive in MPT JP Postcard	Executive size JP postcard is requested in the multi-purpose tray.	Load JP postcard, executive sized paper in the multi-purpose tray.
Executive in MPT JP Postcard 2nd	Executive size JP postcard 2nd is requested in the multi-purpose tray.	Load JP postcard 2nd, executive sized paper in the multi-purpose tray.
Executive in MPT Bond/Letterhead	Executive size bond/letterhead is requested in the multi-purpose tray.	Load bond/letterhead, executive sized paper in the multi-purpose tray.
Executive in MPT Recycled Paper	Executive size recycled paper is requested in the multi-purpose tray.	Load recycled, executive sized envelope in the multi-purpose tray.
ENV.C5 in MPT Plain Paper	Envelope C5 size plain paper is requested in the multi-purpose tray.	Load plain, Envelope C5 sized paper in the multi-purpose tray.
ENV.C5 in MPT Thin Paper	Envelope C5 size thin paper is requested in the multi-purpose tray.	Load thin, Envelope C5 sized paper in the multi-purpose tray.
ENV.C5 in MPT Thick Paper	Envelope C5 size thick paper is requested in the multi-purpose tray.	Load thick, Envelope C5 sized paper in the multi-purpose tray.
ENV.C5 in MPT Transparency	Envelope C5 size transparency is requested in the multi-purpose tray.	Load transparency, Envelope C5 sized paper in the multi-purpose tray.

Message on LCD	Possible Cause	Recovery
ENV.C5 in MPT Label	Envelope C5 size label is requested in the multi-purpose tray.	Load label, Envelope C5 sized paper in the multi-purpose tray.
ENV.C5 in MPT Coated Paper	Envelope C5 size coated paper is requested in the multi-purpose tray.	Load coated, Envelope C5 sized paper in the multi-purpose tray.
ENV.C5 in MPT Card Stock	ENV.C5 size card stock is requested in the multi-purpose tray.	Load card stock, ENV.C5 sized paper in the multi-purpose tray.
ENV.C5 in MPT Envelope	Envelope C5 size envelope is requested in the multi-purpose tray.	Load envelope, Envelope C5 sized envelope in the multi-purpose tray.
ENV.C5 in MPT JP Postcard	ENV.C5 size JP postcard is requested in the multi-purpose tray.	Load JP postcard, ENV.C5 sized paper in the multi-purpose tray.
ENV.C5 in MPT JP Postcard 2nd	ENV.C5 size JP postcard 2nd is requested in the multi-purpose tray.	Load JP postcard 2nd, ENV.C5 sized paper in the multi-purpose tray.
ENV.C5 in MPT Bond/Letterhead	Envelope C5 size bond/letterhead is requested in the multi-purpose tray.	Load bond/letterhead, Envelope C5 sized paper in the multi-purpose tray.
ENV.C5 in MPT Recycled Paper	Envelope C5 size recycled paper is requested in the multi-purpose tray.	Load recycled, Envelope C5 sized paper in the multi-purpose tray.
ENV.C6 in MPT Plain Paper	Envelope C6 size plain paper is requested in the multi-purpose tray.	Load plain, Envelope C6 sized paper in the multi-purpose tray.
ENV.C6 in MPT Thin Paper	Envelope C6 size thin paper is requested in the multi-purpose tray.	Load thin, Envelope C6 sized paper in the multi-purpose tray.
ENV.C6 in MPT Transparency	Envelope C6 size transparency is requested in the multi-purpose tray.	Load transparency, Envelope C6 sized paper in the multi-purpose tray.
ENV.C6 in MPT Label	Envelope C6 size label is requested in the multi-purpose tray.	Load label, Envelope C6 sized paper in the multi-purpose tray.
ENV.C6 in MPT Coated Paper	Envelope C6 size coated paper is requested in the multi-purpose tray.	Load coated, Envelope C6 sized paper in the multi-purpose tray.
ENV.C6 in MPT Thick Paper	Envelope C6 size thick paper is requested in the multi-purpose tray.	Load thick, Envelope C6 sized paper in the multi-purpose tray.
ENV.C6 in MPT Card Stock	ENV.C6 size card stock is requested in the multi-purpose tray.	Load card stock, Envelope C6 sized paper in the multi-purpose tray.
ENV.C6 in MPT Envelope	Envelope C6 size envelope is requested in the multi-purpose tray.	Load envelope, Envelope C6 sized envelope in the multi-purpose tray.
ENV.C6 in MPT JP Postcard	Envelope C6 size JP postcard is requested in the multi-purpose tray.	Load JP postcard, Envelope C6 sized paper in the multi-purpose tray.
ENV.C6 in MPT JP Postcard 2nd	Envelope C6 size JP postcard 2nd is requested in the multi-purpose tray.	Load JP postcard 2nd, Envelope C6 sized paper in the multi-purpose tray.
ENV.C6 in MPT Bond/Letterhead	Envelope C6 size bond/letterhead is requested in the multi-purpose tray.	Load bond/letterhead, Envelope C6 sized paper in the multi-purpose tray.
ENV.C6 in MPT Recycled Paper	Envelope C6 size recycled paper is requested in the multi-purpose tray.	Load recycled, Envelope C6 sized paper in the multi-purpose tray.
ENV.#9 in MPT Plain Paper	Envelope #9 size plain paper is requested in the multi-purpose tray.	Load plain, Envelope #9 sized paper in the multi-purpose tray.
ENV.#9 in MPT Thin Paper	Envelope #9 size thin paper is requested in the multi-purpose tray.	Load thin, Envelope #9 sized paper in the multi-purpose tray.

Message on LCD	Possible Cause	Recovery
ENV.#9 in MPT Transparency	Envelope #9 size transparency is requested in the multi-purpose tray.	Load transparency, Envelope #9 sized paper in the multi-purpose tray.
ENV.#9 in MPT Label	Envelope #9 size label is requested in the multi-purpose tray.	Load label, Envelope #9 sized paper in the multi-purpose tray.
ENV.#9 in MPT Coated Paper	Envelope #9 size coated paper is requested in the multi-purpose tray.	Load coated, Envelope #9 sized paper in the multi-purpose tray.
ENV.#9 in MPT Thick Paper	Envelope #9 size thick paper is requested in the multi-purpose tray.	Load thick, Envelope #9 sized paper in the multi-purpose tray.
ENV.#9 in MPT Card Stock	ENV.#9 size card stock is requested in the multi-purpose tray.	Load card stock, Envelope #9 sized paper in the multi-purpose tray.
ENV.#9 in MPT Envelope	Envelope #9 size envelope is requested in the multi-purpose tray.	Load envelope, Envelope #9 sized envelope in the multi-purpose tray.
ENV.#9 in MPT JP Postcard	ENV.#9 size JP postcard is requested in the multi-purpose tray.	Load JP postcard, Envelope #9 sized paper in the multi-purpose tray.
ENV.#9 in MPT JP Postcard 2nd	ENV.#9 size JP postcard 2nd is requested in the multi-purpose tray.	Load JP postcard 2nd, Envelope #9 sized paper in the multi-purpose tray.
ENV.#9 in MPT Bond/Letterhead	Envelope #9 size bond/letterhead is requested in the multi-purpose tray.	Load bond/letterhead, Envelope #9 sized envelope in the multi-purpose tray.
ENV.#9 in MPT Recycled Paper	Envelope #9 size recycled paper is requested in the multi-purpose tray.	Load recycled, Envelope #9 sized paper in the multi-purpose tray.
ENV.#10 in MPT Plain Paper	Envelope #10 size plain paper is requested in the multi-purpose tray.	Load plain, Envelope #10 sized paper in the multi-purpose tray.
ENV.#10 in MPT Thin Paper	Envelope #10 size thin paper is requested in the multi-purpose tray.	Load thin, Envelope #10 sized paper in the multi-purpose tray.
ENV.#10 in MPT Transparency	Envelope #10 size transparency is requested in the multi-purpose tray.	Load transparency, Envelope #10 sized paper in the multi-purpose tray.
ENV.#10 in MPT Label	Envelope #10 size label is requested in the multi-purpose tray.	Load label, Envelope #10 sized paper in the multi-purpose tray.
ENV.#10 in MPT Coated Paper	Envelope #10 size coated paper requested in the multi-purpose tray.	Load coated, Envelope #10 sized paper in the multi-purpose tray.
ENV.#10 in MPT Thick Paper	Envelope #10 size thick paper is requested in the multi-purpose tray.	Load thick, Envelope #10 sized paper in the multi-purpose tray.
ENV.#10 in MPT Card Stock	Envelope #10 size card stock is requested in the multi-purpose tray.	Load card stock, Envelope #10 sized paper in the multi-purpose tray.
ENV.#10 in MPT Envelope	Envelope #10 size envelope is requested in the multi-purpose tray.	Load envelope, Envelope #10 sized envelope in the multi-purpose tray.
ENV.#10 in MPT JP Postcard	Envelope #10 size JP postcard is requested in the multi-purpose tray.	Load JP postcard, Envelope #10 sized paper in the multi-purpose tray.
ENV.#10 in MPT JP Postcard 2nd	Envelope #10 size JP postcard 2nd is requested in the multi-purpose tray.	Load JP postcard 2nd, Envelope #10 sized paper in the multi-purpose tray.
ENV.#10 in MPT Bond/Letterhead	Envelope #10 size bond/letterhead is requested in the multi-purpose tray.	Load bond/letterhead, Envelope #10 sized paper in the multi-purpose tray.
ENV.#10 in MPT Recycled Paper	Envelope #10 size recycled paper is requested in the multi-purpose tray.	Load recycled, Envelope #10 sized paper in the multi-purpose tray.

Message on LCD	Possible Cause	Recovery
ENV.DL in MPT Plain Paper	Envelope DL size plain paper is requested in the multi-purpose tray.	Load plain, Envelope DL sized paper in the multi-purpose tray.
ENV.DL in MPT Thin Paper	Envelope DL size thin paper is requested in the multi-purpose tray.	Load thin, Envelope DL sized paper in the multi-purpose tray.
ENV.DL in MPT Transparency	Envelope DL size transparency is requested in the multi-purpose tray.	Load transparency, Envelope DL sized paper in the multi-purpose tray.
ENV.DL in MPT Label	Envelope DL size label is requested in the multi-purpose tray.	Load label, Envelope DL sized paper in the multi-purpose tray.
ENV.DL in MPT Coated Paper	Envelope DL size coated paper is requested in the multi-purpose tray.	Load coated, Envelope DL sized paper in the multi-purpose tray.
ENV.DL in MPT Thick Paper	Envelope DL size thick paper is requested in the multi-purpose tray.	Load thick, Envelope DL sized paper in the multi-purpose tray.
ENV.DL in MPT Card Stock	Envelope DL size card stock is requested in the multi-purpose tray.	Load card stock, Envelope DL sized paper in the multi-purpose tray.
ENV.DL in MPT Envelope	Envelope DL size envelope is requested in the multi-purpose tray.	Load envelope, Envelope DL sized envelope in the multi-purpose tray.
ENV.DL in MPT JP Postcard	Envelope DL size JP postcard is requested in the multi-purpose tray.	Load JP postcard, Envelope DL sized paper in the multi-purpose tray.
ENV.DL in MPT JP Postcard 2nd	Envelope DL size JP postcard 2nd is requested in the multi-purpose tray.	Load JP postcard 2nd, Envelope DL sized paper in the multi-purpose tray.
ENV.DL in MPT Bond/Letterhead	Envelope DL size bond/letterhead is requested in the multi-purpose tray.	Load bond/letterhead, Envelope DL sized paper in the multi-purpose tray.
ENV.DL in MPT Recycled Paper	Envelope DL size recycled paper is requested in the multi-purpose tray.	Load recycled, Envelope DL sized paper in the multi-purpose tray.
ENV.Monarch in MPT Plain Paper	Envelope Monarch size plain paper is requested in the multi-purpose tray.	Load plain, Envelope Monarch sized paper in the multi-purpose tray.
ENV.Monarch in MPT Thin Paper	Envelope Monarch size thin paper is requested in the multi-purpose tray.	Load thin, Envelope Monarch sized paper in the multi-purpose tray.
ENV.Monarch in MPT Thick Paper	Envelope Monarch size thick paper is requested in the multi-purpose tray.	Load thick, Envelope Monarch sized paper in the multi-purpose tray.
ENV.Monarch in MPT Transparency	Envelope Monarch size transparency is requested in the multi-purpose tray.	Load transparency, Envelope Monarch sized paper in the multi-purpose tray.
ENV.Monarch in MPT Label	Envelope Monarch size label is requested in the multi-purpose tray.	Load label, Envelope Monarch sized paper in the multi-purpose tray.
ENV.Monarch in MPT Coated Paper	Envelope Monarch size coated paper is requested in the multi-purpose tray.	Load coated, Envelope Monarch sized paper in the multi-purpose tray.
ENV.Monarch in MPT Card Stock	Envelope Monarch size card stock is requested in the multi-purpose tray.	Load card stock, Envelope Monarch sized paper in the multi-purpose tray.
ENV.Monarch in MPT Envelope	Envelope Monarch size envelope is requested in the multi-purpose tray.	Load envelope, Envelope Monarch sized envelope in the multi-purpose tray.
ENV.Monarch in MPT JP Postcard	Envelope Monarch size JP postcard is requested in the multi-purpose tray.	Load JP postcard, Envelope Monarch sized paper in the multi-purpose tray.
ENV.Monarch in MPT JP Postcard 2nd	Envelope Monarch size JP postcard 2nd is requested in the multi-purpose tray.	Load JP postcard 2nd, Envelope Monarch sized paper in the multi-purpose tray.
ENV.Monarch in MPT Bond/Letterhead	Envelope Monarch size bond/letterhead is requested in the multi-purpose tray.	Load bond/letterhead, Envelope Monarch sized paper in the multi-purpose tray.
ENV.Monarch in MPT Recycled Paper	Envelope Monarch size recycled paper is requested in the multi-purpose tray.	Load recycled, Envelope Monarch sized paper in the multi-purpose tray.

Message on LCD	Possible Cause	Recovery
16K in MPT Plain Paper	16K size plain paper is requested in the multi-purpose tray.	Load plain, 16Ksized paper in the multi-purpose tray.
16K in MPT Thin Paper	16K size thin paper is requested in the multi-purpose tray.	Load thin, 16K sized paper in the multi-purpose tray.
16K in MPT Transparency	16K size transparency is requested in the multi-purpose tray.	Load transparency, 16K sized paper in the multi-purpose tray.
16K in MPT Label	16K size label is requested in the multi-purpose tray.	Load label, 16K sized paper in the multi-purpose tray.
16K in MPT Coated Paper	16K size coated paper is requested in the multi-purpose tray.	Load coated, 16K sized paper in the multi-purpose tray.
16K in MPT Thick Paper	16K size thick paper is requested in the multi-purpose tray.	Load thick, 16K sized paper in the multi-purpose tray.
16K in MPT Card Stock	16K size card stock is requested in the multi-purpose tray.	Load card stock, 16K sized paper in the multi-purpose tray.
16K in MPT Envelope	16K size envelope is requested in the multi-purpose tray.	Load envelope, 16K sized envelope in the multi-purpose tray.
16K in MPT JP Postcard	16K size JP postcard is requested in the multi-purpose tray.	Load JP postcard, 16K sized paper in the multi-purpose tray.
16K in MPT JP Postcard 2nd	16K size JP postcard 2nd is requested in the multi-purpose tray.	Load JP postcard 2nd, 16K sized paper in the multi-purpose tray.
16K in MPT Bond/Letterhead	16K size bond/letterhead is requested in the multi-purpose tray.	Load bond/letterhead, 16K sized paper in the multi-purpose tray.
16K in MPT Recycled Paper	16K size recycled paper is requested in the multi-purpose tray.	Load recycled, 16K sized paper in the multi-purpose tray.
JP ENV.You#4 in MPT Plain Paper	JP ENV.You#4 size plain paper is requested in the multi-purpose tray.	Load plain, JP ENV.You#4 sized paper in the multi-purpose tray.
JP ENV.You#4 in MPT Thin Paper	JP ENV.You#4 size thin paper is requested in the multi-purpose tray.	Load thin, JP ENV.You#4 sized paper in the multi-purpose tray.
JP ENV.You#4 in MPT Transparency	JP ENV.You#4 size transparency is requested in the multi-purpose tray.	Load transparency, JP ENV.You#4 sized paper in the multi-purpose tray.
JP ENV.You#4 in MPT Label	JP ENV.You#4 size label is requested in the multi-purpose tray.	Load label, JP ENV.You#4 sized paer in the multi-purpose tray.
JP ENV.You#4 in MPT Coated Paper	JP ENV.You#4 size coated paper is requested in the multi-purpose tray.	Load coated, JP ENV.You#4 sized paper in the multi-purpose tray.
JP ENV.You#4 in MPT Thick Paper	JP ENV.You#4 size thick paper is requested in the multi-purpose tray.	Load thick, JP ENV.You#4 sized paper in the multi-purpose tray.
JP ENV.You#4 in MPT Card Stock	JP ENV.You#4 size card stock is requested in the multi-purpose tray.	Load card stock, JP ENV.You#4 sized paper in the multi-purpose tray.
JP ENV.You#4 in MPT Envelope	JP ENV.You#4 size envelope is requested in the multi-purpose tray.	Load envelope, JP ENV.You#4 sized envelope in the multi-purpose tray.
JP ENV.You#4 in MPT JP Postcard	JP ENV.You#4 size JP postcard is requested in the multi-purpose tray.	Load JP postcard, JP ENV.You#4 sized paper in the multi-purpose tray.
JP ENV.You#4 in MPT JP Postcard 2nd	JP ENV.You#4 size JP postcard 2nd is requested in the multi-purpose tray.	Load JP postcard 2nd, JP ENV.You#4 sized paper in the multi-purpose tray.
JP ENV.You#4 in MPT Bond/Letterhead	JP ENV.You#4 size bond/letterhead is requested in the multi-purpose tray.	Load bond/letterhead, JP ENV.You#4 sized paper in the multi-purpose tray.
JP ENV.You#4 in MPT Recycled Paper	JP ENV.You#4 size recycled paper is requested in the multi-purpose tray.	Load recycled, JP ENV.You#4 sized paper in the multi-purpose tray.

Message on LCD	Possible Cause	Recovery
JP POST in MPT Plain Paper	JP POST size plain paper is requested in the multi-purpose tray.	Load plain, JP POST sized paper in the multi-purpose tray.
JP POST in MPT Thin Paper	JP POST size thin paper is requested in the multi-purpose tray.	Load thin, JP POST sized paper in the multi-purpose tray.
JP POST in MPT Transparency	JP POST size transparency is requested in the multi-purpose tray.	Load transparency, JP POST sized papert in the multi-purpose tray.
JP POST in MPT Label	JP POST size label is requested in the multi-purpose tray.	Load label, JP POST sized paper in the multi-purpose tray.
JP POST in MPT Coated Paper	JP POST size coated paper is requested in the multi-purpose tray.	Load coated, JP POST sized paper in the multi-purpose tray.
JP POST in MPT Thick Paper	JP POST size thick paper is requested in the multi-purpose tray.	Load thick, JP POST sized paper in the multi-purpose tray.
JP POST in MPT Card Stock	JP POST size card stock is requested in the multi-purpose tray.	Load card stock, JP POST sized paper in the multi-purpose tray.
JP POST in MPT Envelope	JP POST size envelope is requested in the multi-purpose tray.	Load envelope, JP POST sized envelope in the multi-purpose tray.
JP POST in MPT JP Postcard	JP POST size JP postcard is requested in the multi-purpose tray.	Load JP postcard, JP POST sized paper in the multi-purpose tray.
JP POST in MPT JP Postcard 2nd	JP POST size JP postcard 2nd is requested in the multi-purpose tray.	Load JP postcard 2nd, JP POST sized paper in the multi-purpose tray.
JP POST in MPT Bond/Letterhead	JP POST size bond/letterhead is requested in the multi-purpose tray.	Load bond/letterhead, JP POST sized paper in the multi-purpose tray.
JP POST in MPT Recycled Paper	JP POST size recycled paper is requested in the multi-purpose tray.	Load recycled, JP POST sized paper in the multi-purpose tray.
JP POSTD in MPT Plain Paper	JP POSTD size plain paper is requested in the multi-purpose tray.	Load plain, JP POSTD sized paper in the multi-purpose tray.
JP POSTD in MPT Thin Paper	JP POSTD size thin paper is requested in the multi-purpose tray.	Load thin, JP POSTD sized paper in the multi-purpose tray.
JP POSTD in MPT Transparency	JP POSTD size transparency is requested in the multi-purpose tray.	Load transparency, JP POSTD sized paper in the multi-purpose tray.
JP POSTD in MPT Label	JP POSTD size label is requested in the multi-purpose tray.	Load label, JP POSTD sized paper in the multi-purpose tray.
JP POSTD in MPT Coated Paper	JP POSTD size coated paper is requested in the multi-purpose tray.	Load coated, JP POSTD sized paper in the multi-purpose tray.
JP POSTD in MPT Thick Paper	JP POSTD size thick paper is requested in the multi-purpose tray.	Load thick, JP POSTD sized paper in the multi-purpose tray.
JP POSTD in MPT Card Stock	JP POSTD size card stock is requested in the multi-purpose tray.	Load card stock, JP POSTD sized paper in the multi-purpose tray.
JP POSTD in MPT Envelope	JP POSTD size envelope is requested in the multi-purpose tray.	Load envelope, JP POSTD sized envelope in the multi-purpose tray.
JP POSTD in MPT JP Postcard	JP POSTD size JP postcard is requested in the multi-purpose tray.	Load JP postcard, JP POSTD sized paper in the multi-purpose tray.
JP POSTD in MPT JP Postcard 2nd	JP POSTD size JP postcard 2nd is requested in the multi-purpose tray.	Load JP postcard 2nd, JP POSTD sized paper in the multi-purpose tray.
JP POSTD in MPT Bond/Letterhead	JP POSTD size bond/letterhead is requested in the multi-purpose tray.	Load bond/letterhead, JP POSTD sized paper in the multi-purpose tray.
JP POSTD in MPT Recycled Paper	JP POSTD size recycled paper is requested in the multi-purpose tray.	Load recycled, JP POSTD sized paper in the multi-purpose tray.

Message on LCD	Possible Cause	Recovery
Custom in MPT Plain Paper	Custom size plain paper is requested in the multi-purpose tray.	Load plain, Custom sized paper in the multi-purpose tray.
Custom in MPT Thin Paper	Custom size thin paper is requested in the multi-purpose tray.	Load thin, Custom sized paper in the multi-purpose tray.
Custom in MPT Transparency	Custom size transparency is requested in the multi-purpose tray.	Load transparency, Custom sized paper in the multi-purpose tray.
Custom in MPT Label	Custom size label is requested in the multi-purpose tray.	Load label, Custom sized paper in the multi-purpose tray.
Custom in MPT Coated Paper	Custom size coated paper is requested in the multi-purpose tray.	Load coated, Custom sized paper in the multi-purpose tray.
Custom in MPT Thick Paper	Custom size thick paper is requested in the multi-purpose tray.	Load thick, Custom sized paper in the multi-purpose tray.
Custom in MPT Card Stock	Custom size card stock is requested in the multi-purpose tray.	Load card stock, Custom sized paper in the multi-purpose tray.
Custom in MPT Envelope	Custom size envelope is requested in the multi-purpose tray.	Load envelope, Custom sized envelope in the multi-purpose tray.
Custom in MPT JP Postcard	Custom size JP postcard is requested in the multi-purpose tray.	Load JP postcard, Custom sized paper in the multi-purpose tray.
Custom in MPT JP Postcard 2nd	Custom size JP postcard 2nd is requested in the multi-purpose tray.	Load JP postcard 2nd, Custom sized paper in the multi-purpose tray.
Custom in MPT Bond/Letterhead	Custom size bond/letterhead is requested in the multi-purpose tray.	Load bond/letterhead, Custom sized paper in the multi-purpose tray.
Custom in MPT Recycled Paper	Custom size recycled paper is requested in the multi-purpose tray.	Load recycled, Custom sized paper in the multi-purpose tray.
The first page is printed, then error message, and **Continue** or **Cancel** are displayed by turns.	The length of the loaded media in the multi-purpose tray is shorter than the paper size setting of the printer driver.	Replace the media with the correct one and press the **Continue** button on the printer panel. The printer will print from the first page. Press the **Cancel** button on the printer panel to cancel printing. Set the paper size of the printer driver correctly.

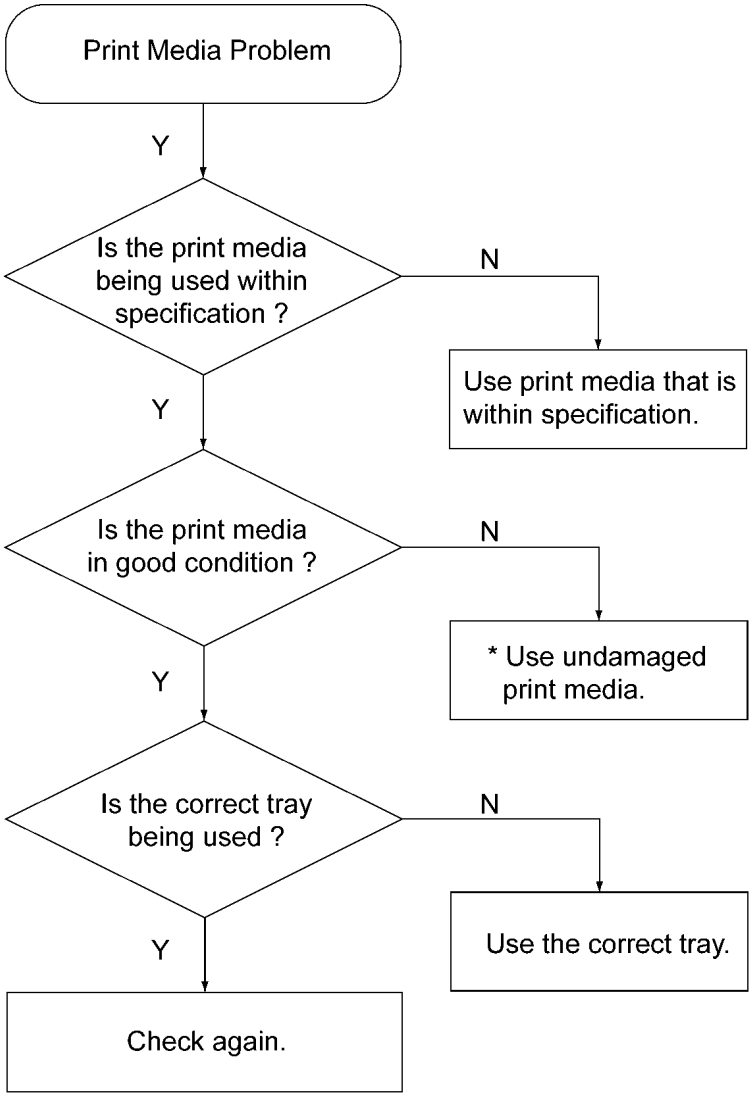
13.2.3. Printer Error (Call Service)

LCD Message	Printer Status	Possible Cause	Recovery (Refer to)
Printer Error 10	Laser Scanner Motor (Polygon Motor) is not phase-locked and is not rotating at normal speed after several seconds from power on.	Laser Scanner Motor (Polygon Motor) Error	Section 13.5.1
Printer Error 11	Video VSZ signal to controller is not detected.	V-Sync (VSZ) error	Section 13.5.1
Printer Error 20	Abnormal leakage current to charge roller or FTR is detected.	Charger error	Section 13.5.2
Printer Error 24	Accumulator CAM movement error has occurred.	Accumulator CAM movement error	Section 13.5.3
Printer Error 35	Color (C, M, Y) OPC home position signal is not held when the color Print Cartridge driver solenoid is turned on.	Color Print Cartridge driver solenoid error	Section 13.5.4
Printer Error 36	Black OPC home position signal is not held when the Black Print Cartridge drive solenoid is turned on.	Black Print Cartridge drive solenoid error	Section 13.5.5
Printer Error 37	When installing the new black print cartridge, the virgin detection fuse is not blown.		Section 13.5.6
Printer Error 38	When installing the new CMY print cartridge, the virgin detection fuse is not blown.		Section 13.5.6
Printer Error 40	Fuser temperature does not reach a certain temperature during warming up. Fuser temperature does not rise a certain degree within 2 sec. Fuser temperature is certain degrees or more lower than target temperature. Fuser temperature is 60°C or less in preheat mode. Initial supplying electric power to the IH coil is 200 W or less.	Temperature rising error or low error	Section 13.5.7
Printer Error 41	Fuser temperature is over 210°C .	High temperature error, thermistor 1 or thermistor 2 short circuit error	Section 13.5.8
Printer Error 43	Temperature detected by thermistor 2 is 50°C or more lower than that by thermistor 1	Temperature (detected by thermistor 2) low error	Section 13.5.7
Printer Error 45	Voltage for IH is under specified value. AC Input Voltage 100/120VAC : Detect voltage is under 80 V AC Input Voltage 220/240VAC : Detect voltage is under 176 V	IH low voltage error	Section 13.5.9
Printer Error 46	Fuser belt is not rotating normally.	Fuser belt error	Section 13.5.10
Printer Error 47	Solenoid drive circuit error has occurred.	Solenoid drive transistor short circuit	Section 13.5.11
Printer Error 48	Temperature detected by thermistor 3 is 35°C or less.	Temperature (detected by thermistor 3) low error	Section 13.5.12
Printer Error 50	Sub Fuser Fan is not phase-locked and is not rotating at normal speed.	Sub Fuser Fan error	Section 13.5.13

LCD Message	Printer Status	Possible Cause	Recovery (Refer to)
Printer Error 53	PSU Fan is not phase-locked and is not rotating at normal speed.	PSU fan Error	Section13.5.14
Printer Error 54	Fuser Fan is not phase-locked and is not rotating at normal speed.	Fuser fan Error	Section13.5.15
Printer Error 56	Color Mis-registration Sensor is not calibrated.	Color Mis-registration Sensor Error	Section13.5.16
Printer Error 65	BK Motor is not phase-locked and is not rotating at normal speed.	BK Motor Error	Section13.5.17
Printer Error 66	CMY Motor is not phase-locked and is not rotating at normal speed.	CMY Motor Error	Section13.5.18
Printer Error 70	Engine Flash ROM Data Error	Engine Program ROM checksum Error	Section13.5.19
Printer Error 72	Read /Write Error of engine EEPROM Error has occurred.	EEPROM Error	Section13.5.20
Printer Error 73	Communication Error between main control and engine control boards	Engine Communication Error	Section13.5.21
Printer Error 80	Controller Program ROM checksum Error has occurred at the power on.	Controller Program ROM checksum Error	Section13.5.22
Printer Error 81	Controller RAM (Standard) type check Error has occurred at the power on.	Controller RAM (Standard Memory) type check Error	Section13.5.23
Printer Error 82	Controller RAM (Optional Memory) type check Error has occurred at the power	Controller RAM (Optional Memory) type check Error	Section13.5.24
Printer Error 83	Controller RAM Read/Write check Error.	Controller RAM check Error	Section13.5.25
Printer Error 84	Controller RAM total amount Error	Controller RAM total amount Error	Section13.5.26
Printer Error 90	Controller EEPROM check Error		Section13.5.27
Printer Error 91	ASIC1 Error		Section13.5.28
Printer Error 92	ASIC2 Error		Section13.5.28
Printer Error 93	CPU Error 1 (DSI Program Exception)		Section13.5.29
Printer Error 94	CPU Error 2 (ISI)		Section13.5.29
Printer Error 95	CPU Error 3 (Configuration)		Section13.5.30
Printer Error 96	Network Chip Error		Section13.5.28
Printer Error 98	CPU High Temperature Error		Section13.5.31

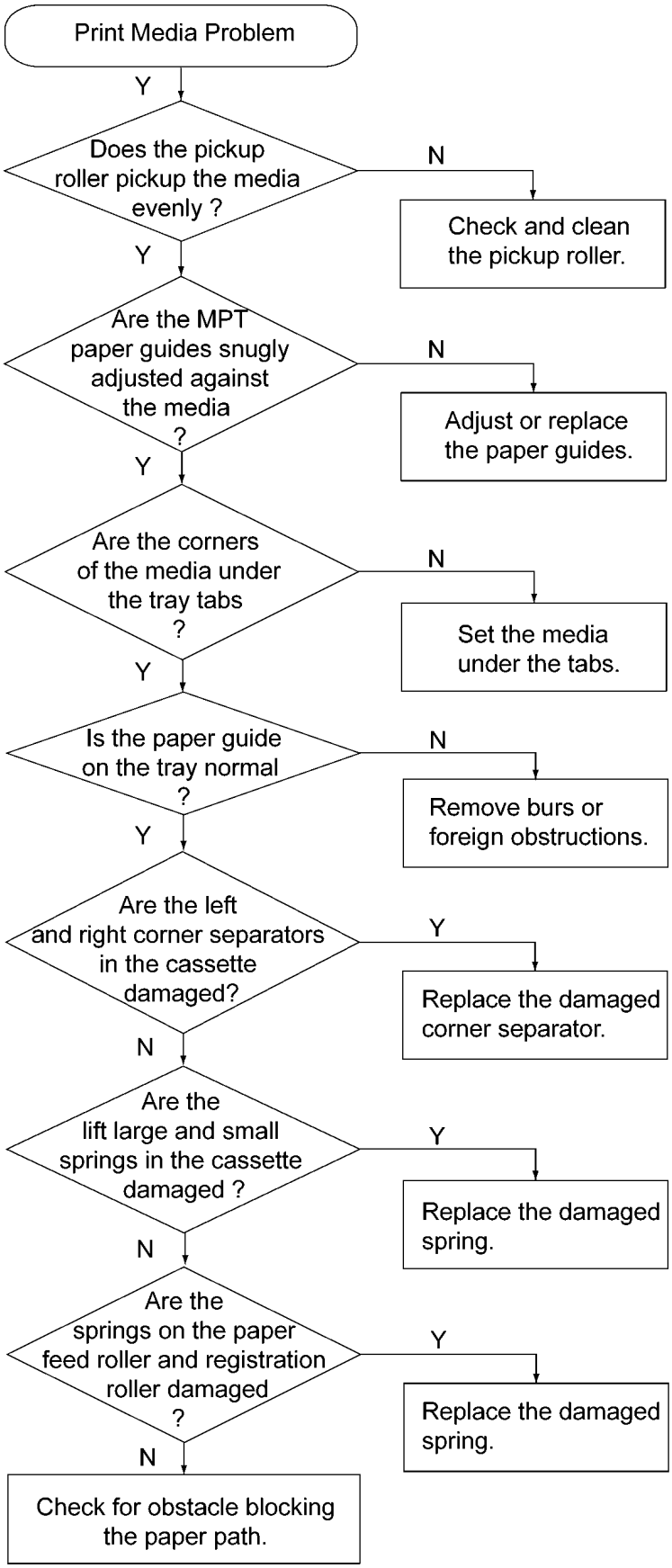
13.3. Jam and HDD Error

13.3.1. Print Media Problem

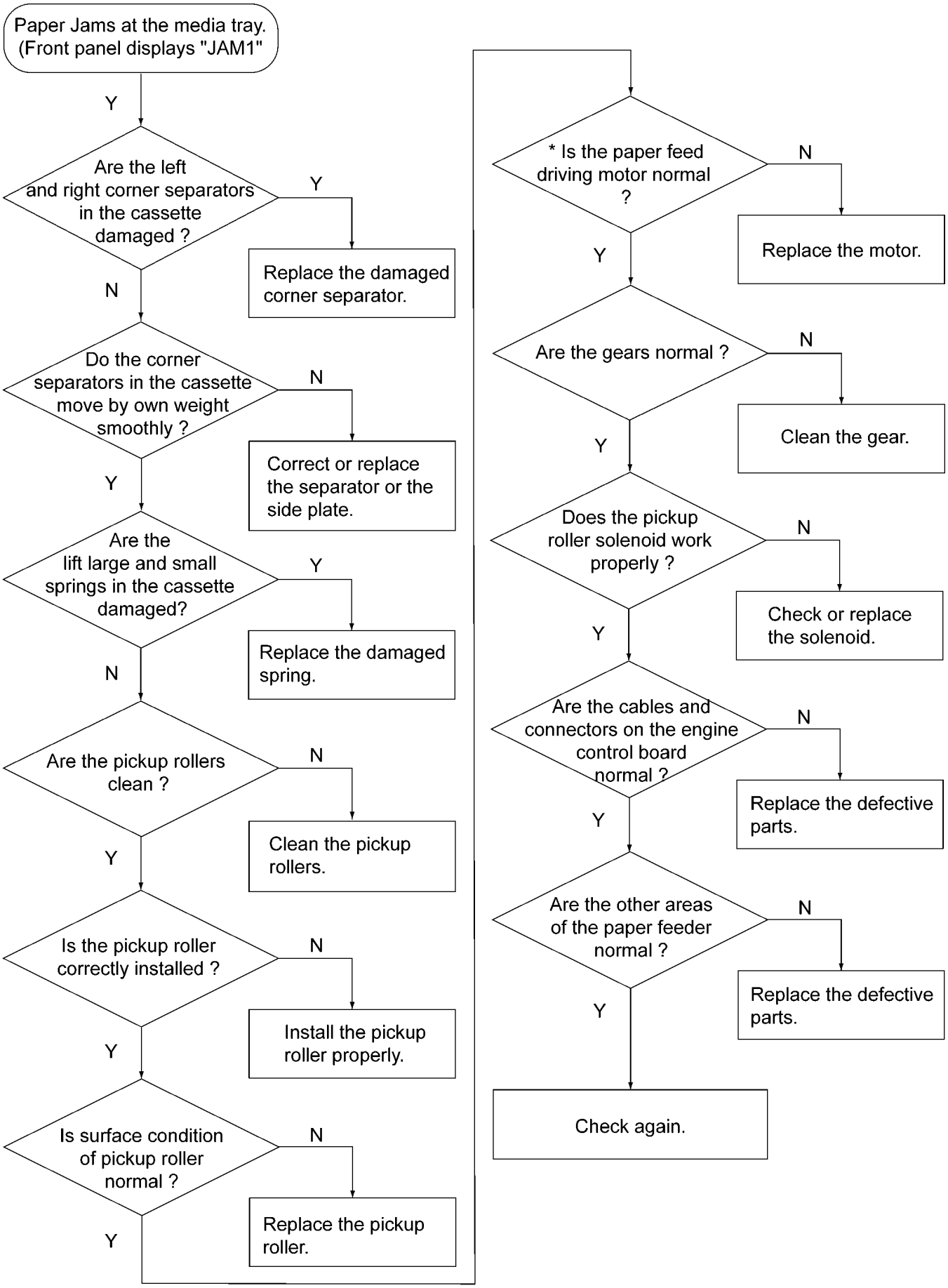


* For example, the media has a Curl, Bend, Burrs of the edge, wrinkle, etc.

13.3.2. Print Media Skew

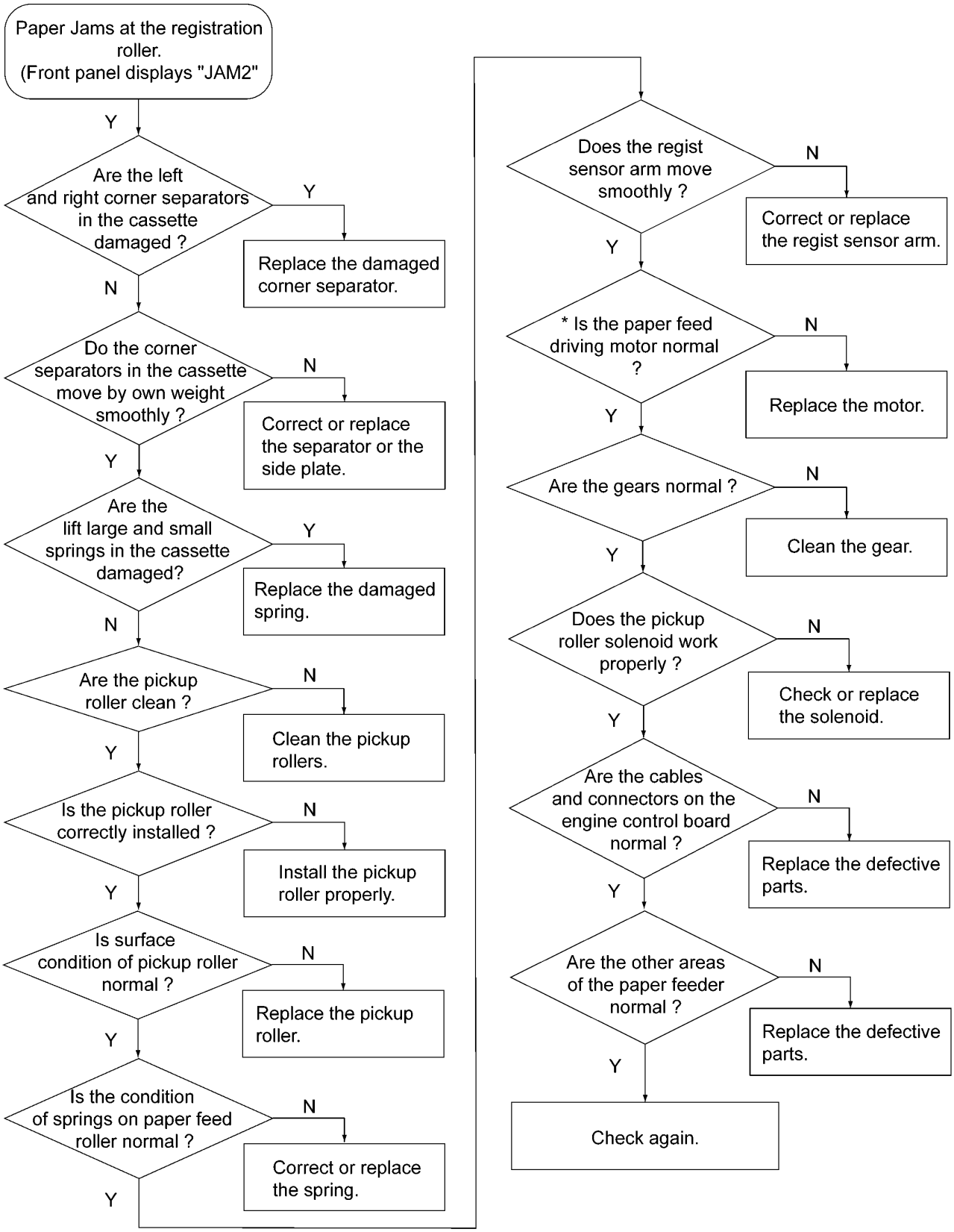

Print Media Problem
Y
Does the pickup roller pickup the media evenly ?
N
Check and clean the pickup roller.
Y
Are the MPT paper guides snugly adjusted against the media ?
N
Adjust or replace the paper guides.
Y
Are the corners of the media under the tray tabs ?
N
Set the media under the tabs.
Y
Is the paper guide on the tray normal ?
N
Remove burs or foreign obstructions.
Y
Are the left and right corner separators in the cassette damaged?
Y
Replace the damaged corner separator.
N
Are the lift large and small springs in the cassette damaged ?
Y
Replace the damaged spring.
N
Are the springs on the paper feed roller and registration roller damaged ?
Y
Replace the damaged spring.
N
Check for obstacle blocking the paper path.

13.3.3. Paper Jam at the media tray



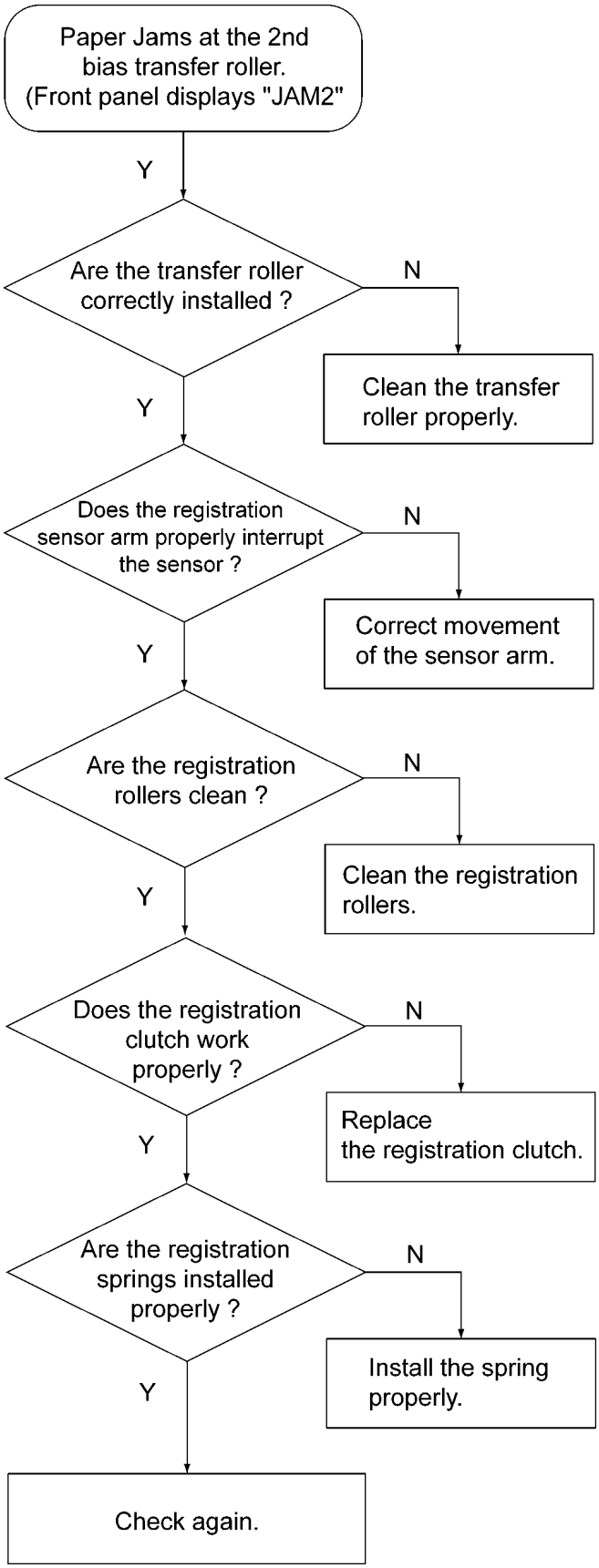
* Flat side of the Cam shaped pickup rollers face down prior to pick a sheet of paper.

13.3.4. Paper Jams at the registration roller

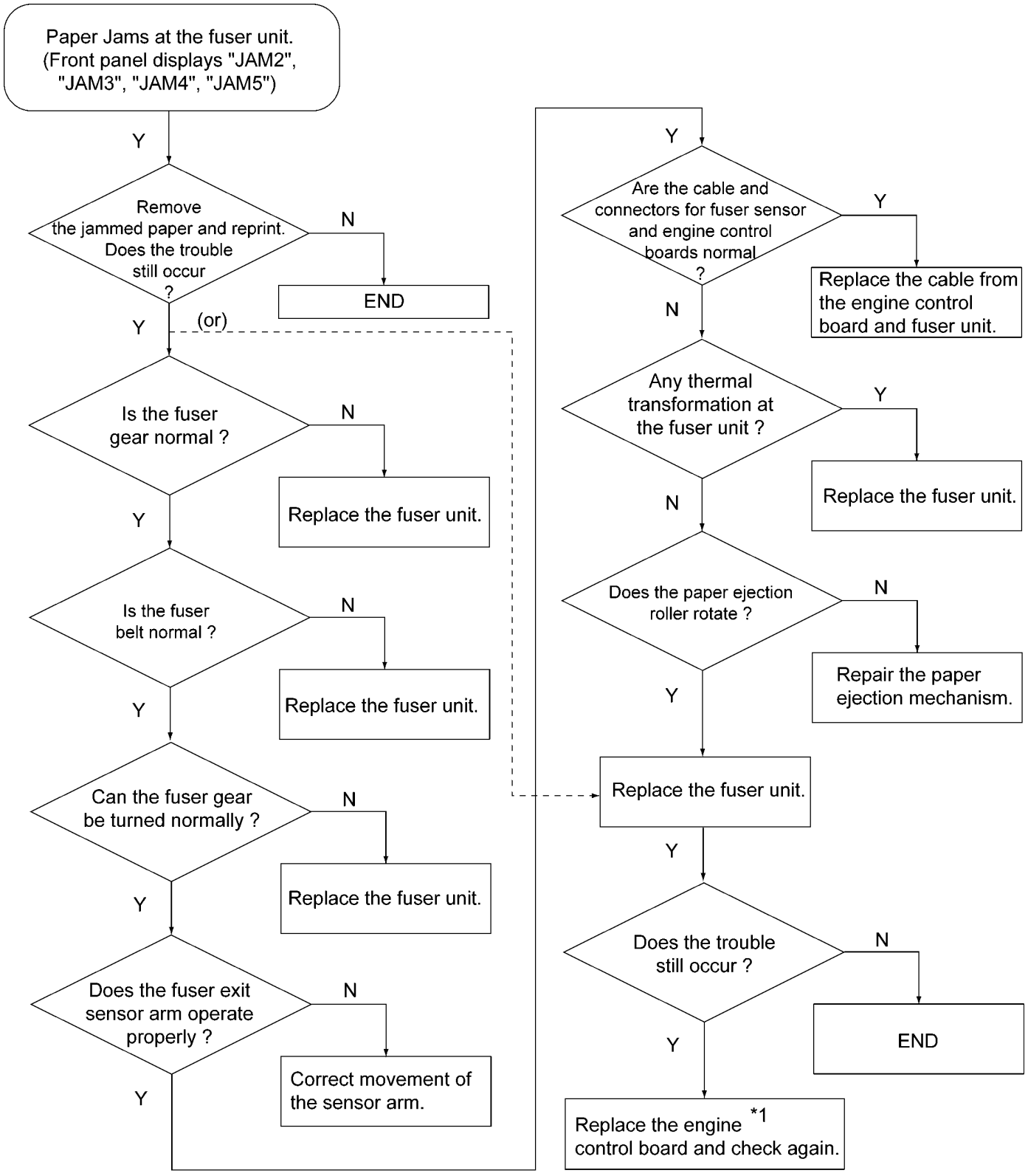


* Flat side of the Cam shaped pickup rollers face down prior to pick a sheet of paper.

13.3.5. Paper Jams at the 2nd bias transfer roller

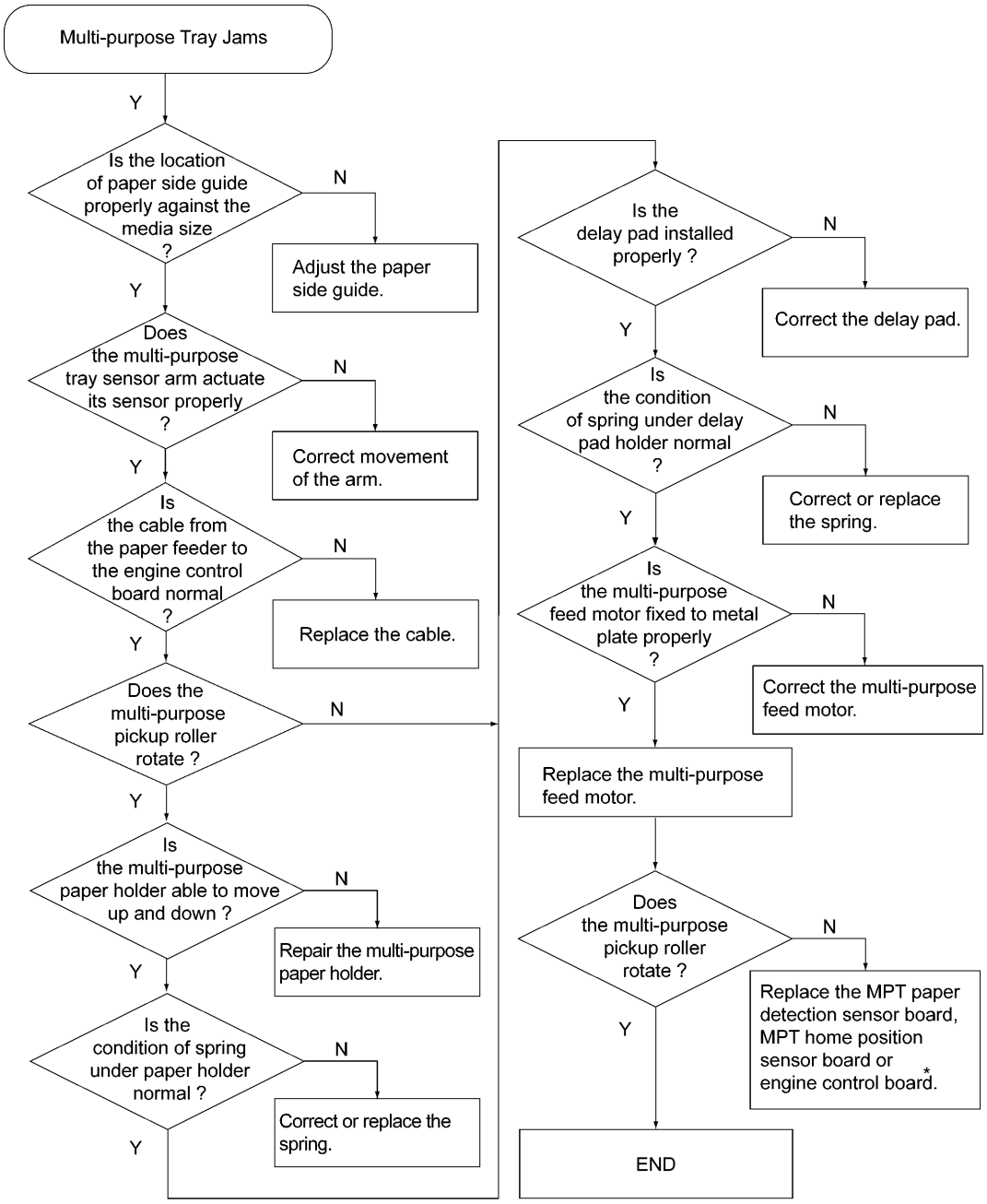


13.3.6. Paper Jams at the fuser unit



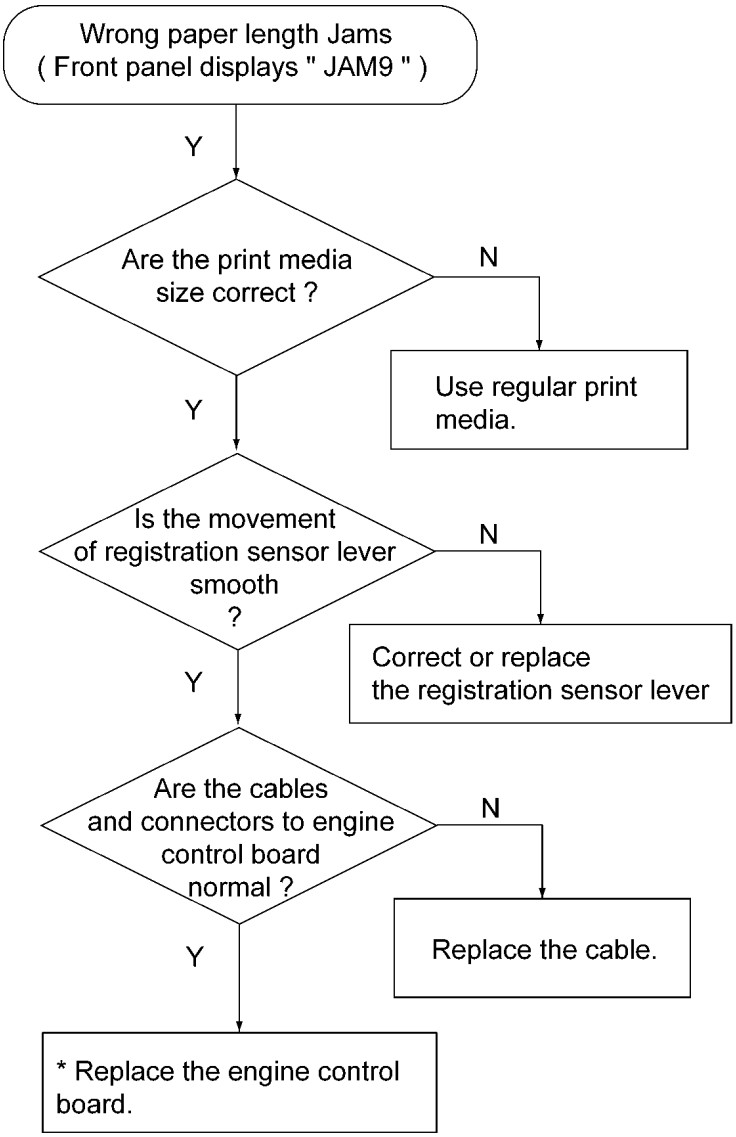
*1 When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

13.3.7. Multi-purpose Tray Jams


Multi-purpose Tray Jams
Y
Is the location of paper side guide properly against the media size ?
N
Adjust the paper side guide.
Y
Does the multi-purpose tray sensor arm actuate its sensor properly ?
N
Correct movement of the arm.
Y
Is the cable from the paper feeder to the engine control board normal ?
N
Replace the cable.
Y
Does the multi-purpose pickup roller rotate ?
N
Y
Is the multi-purpose paper holder able to move up and down ?
N
Repair the multi-purpose paper holder.
Y
Is the condition of spring under paper holder normal ?
N
Correct or replace the spring.
Y
Is the delay pad installed properly ?
N
Correct the delay pad.
Y
Is the condition of spring under delay pad holder normal ?
N
Correct or replace the spring.
Y
Is the multi-purpose feed motor fixed to metal plate properly ?
N
Correct the multi-purpose feed motor.
Y
Replace the multi-purpose feed motor.
Does the multi-purpose pickup roller rotate ?
N
Replace the MPT paper detection sensor board, MPT home position sensor board or engine control board.*
Y
END

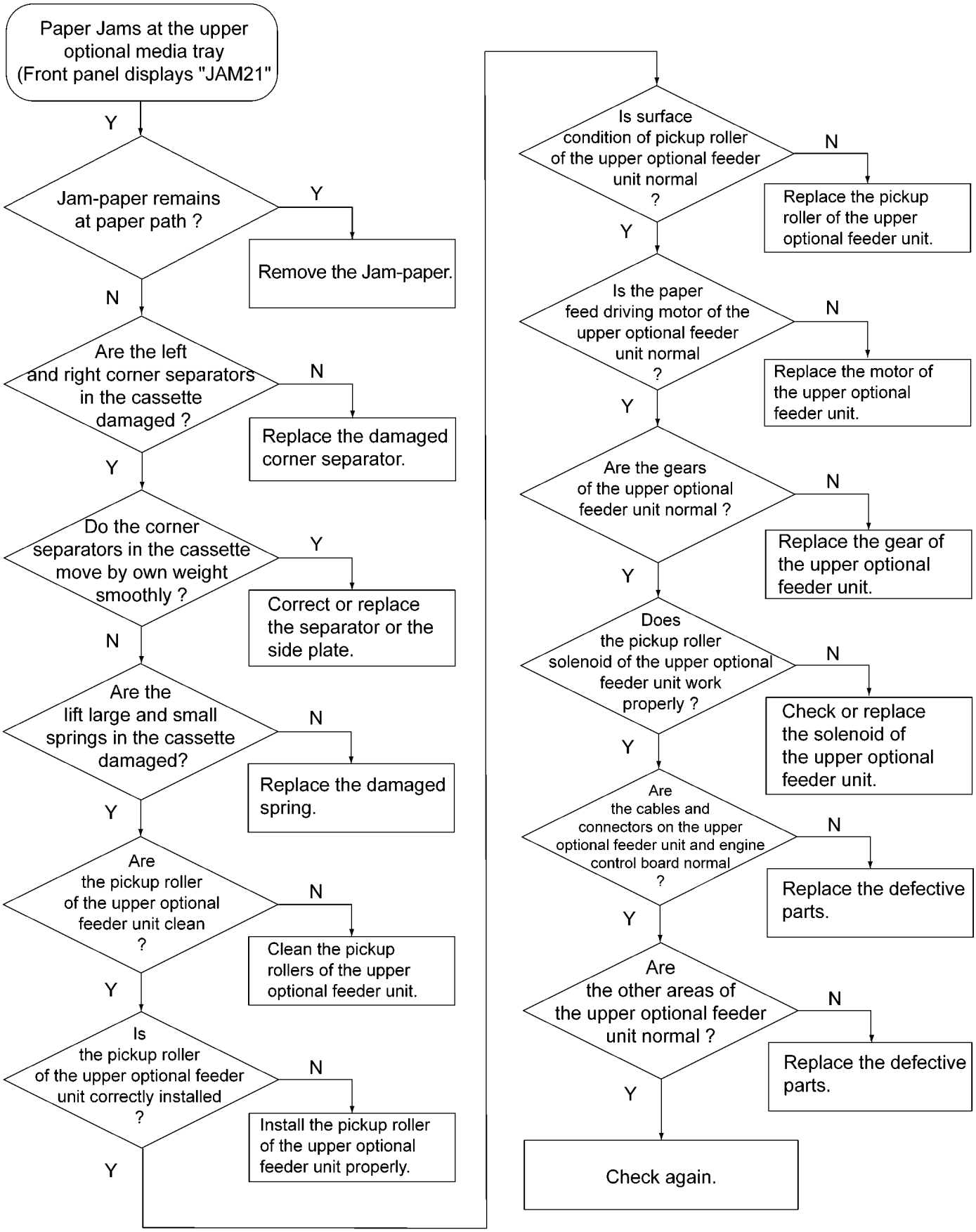
* When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

13.3.8. Wrong paper length Jams

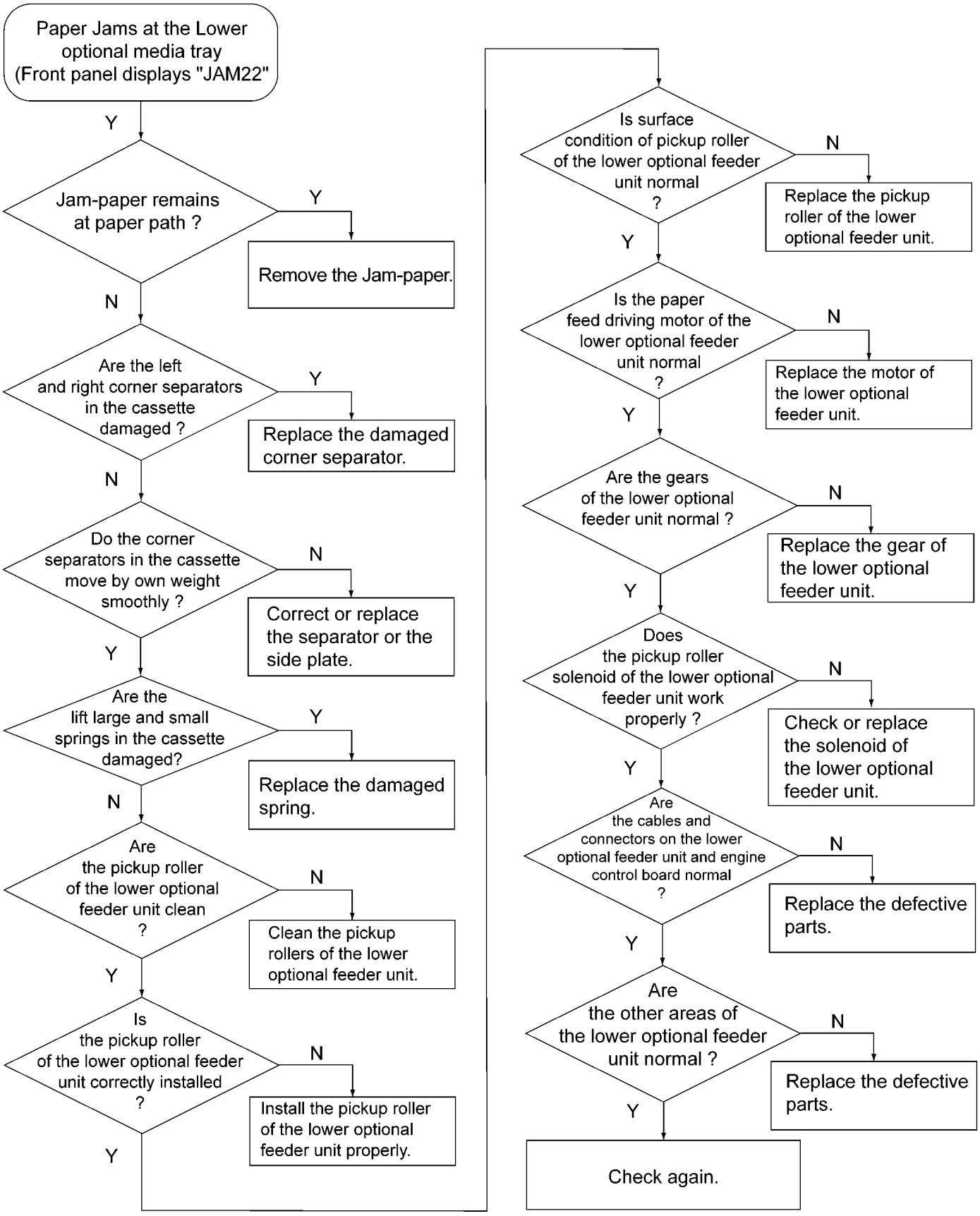

Wrong paper length Jams
(Front panel displays " JAM9 ")
Y
Are the print media size correct ?
N
Use regular print media.
Y
Is the movement of registration sensor lever smooth ?
N
Correct or replace the registration sensor lever
Y
Are the cables and connectors to engine control board normal ?
N
Replace the cable.
Y
* Replace the engine control board.

* When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

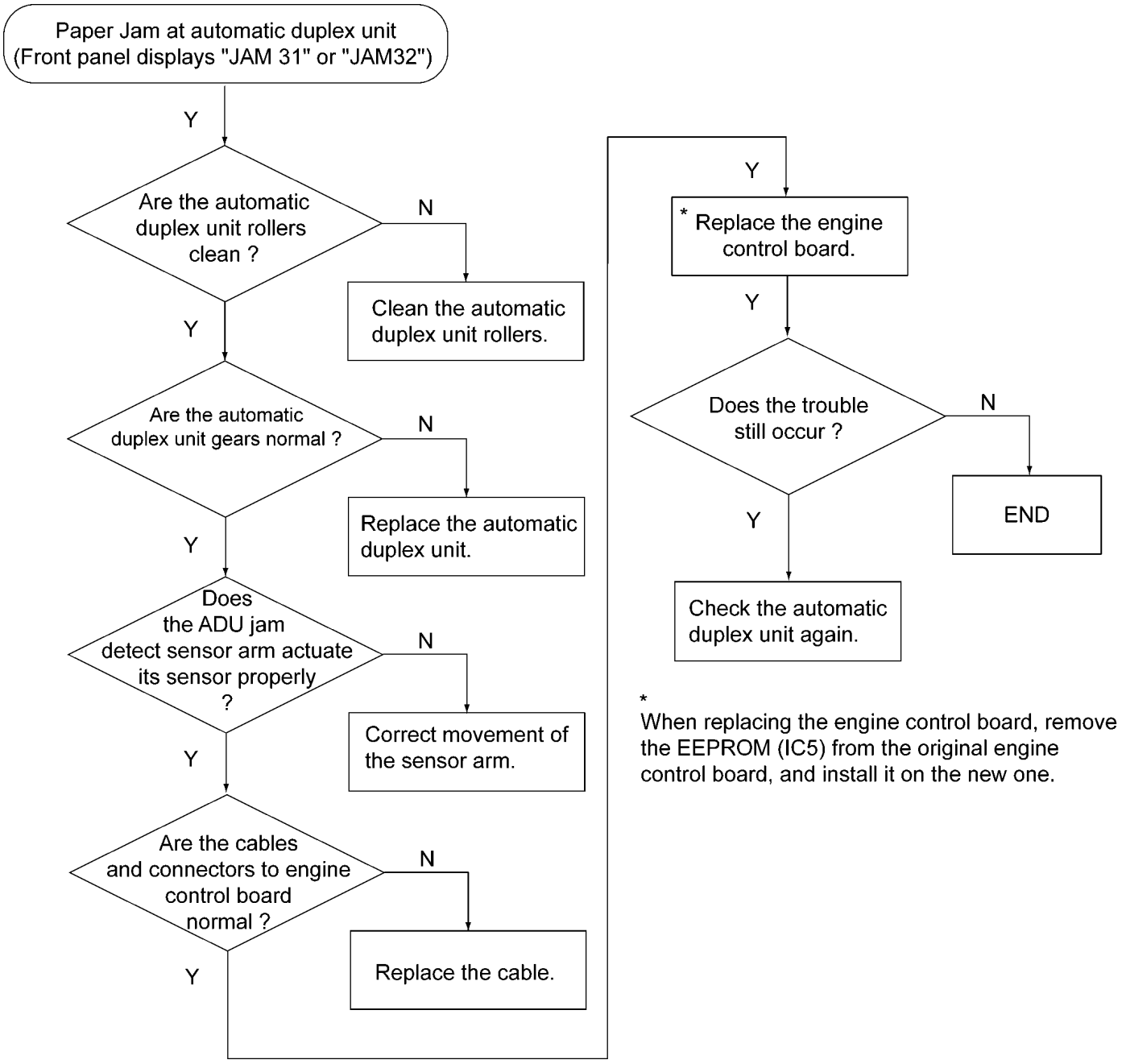
13.3.9. Paper Jams at the upper optional media tray (OPF1)


Paper Jams at the upper optional media tray (Front panel displays "JAM21"
Jam-paper remains at paper path ?
Y
Remove the Jam-paper.
N
Are the left and right corner separators in the cassette damaged ?
N
Replace the damaged corner separator.
Y
Do the corner separators in the cassette move by own weight smoothly ?
Y
Correct or replace the separator or the side plate.
N
Are the lift large and small springs in the cassette damaged?
N
Replace the damaged spring.
Y
Are the pickup roller of the upper optional feeder unit clean ?
N
Clean the pickup rollers of the upper optional feeder unit.
Y
Is the pickup roller of the upper optional feeder unit correctly installed ?
N
Install the pickup roller of the upper optional feeder unit properly.
Y
Is surface condition of pickup roller of the upper optional feeder unit normal ?
N
Replace the pickup roller of the upper optional feeder unit.
Y
Is the paper feed driving motor of the upper optional feeder unit normal ?
N
Replace the motor of the upper optional feeder unit.
Y
Are the gears of the upper optional feeder unit normal ?
N
Replace the gear of the upper optional feeder unit.
Y
Does the pickup roller solenoid of the upper optional feeder unit work properly ?
N
Check or replace the solenoid of the upper optional feeder unit.
Y
Are the cables and connectors on the upper optional feeder unit and engine control board normal ?
N
Replace the defective parts.
Y
Are the other areas of the upper optional feeder unit normal ?
N
Replace the defective parts.
Y
Check again.

13.3.10. Paper Jams at the lower optional media tray (OPF2)

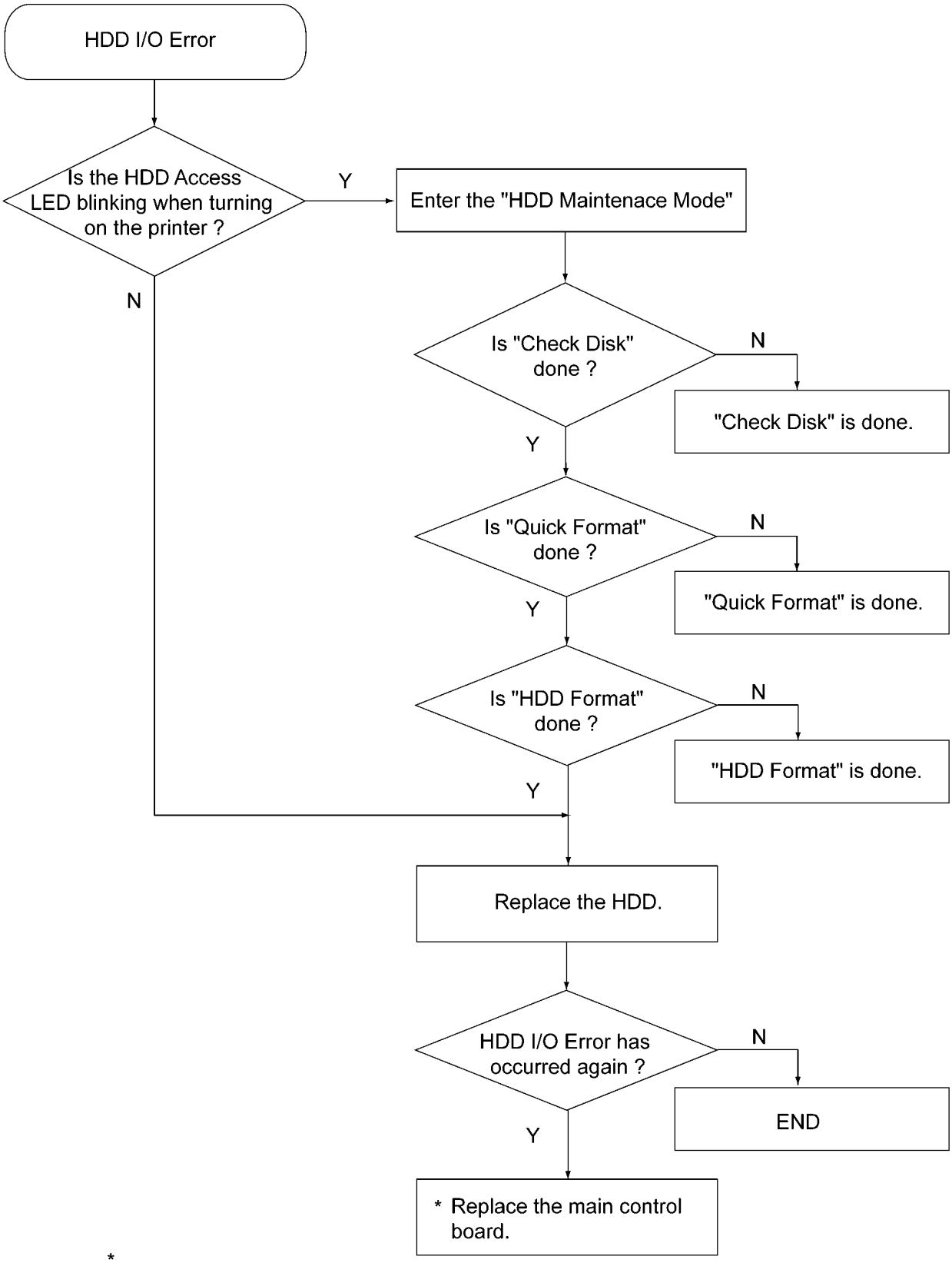

Paper Jams at the Lower optional media tray (Front panel displays "JAM22"
Y
Jam-paper remains at paper path ?
Y
Remove the Jam-paper.
N
Are the left and right corner separators in the cassette damaged ?
Y
Replace the damaged corner separator.
N
Do the corner separators in the cassette move by own weight smoothly ?
N
Correct or replace the separator or the side plate.
Y
Are the lift large and small springs in the cassette damaged?
Y
Replace the damaged spring.
N
Are the pickup roller of the lower optional feeder unit clean ?
N
Clean the pickup rollers of the lower optional feeder unit.
Y
Is the pickup roller of the lower optional feeder unit correctly installed ?
N
Install the pickup roller of the lower optional feeder unit properly.
Y
Is surface condition of pickup roller of the lower optional feeder unit normal ?
N
Replace the pickup roller of the lower optional feeder unit.
Y
Is the paper feed driving motor of the lower optional feeder unit normal ?
N
Replace the motor of the lower optional feeder unit.
Y
Are the gears of the lower optional feeder unit normal ?
N
Replace the gear of the lower optional feeder unit.
Y
Does the pickup roller solenoid of the lower optional feeder unit work properly ?
N
Check or replace the solenoid of the lower optional feeder unit.
Y
Are the cables and connectors on the lower optional feeder unit and engine control board normal ?
N
Replace the defective parts.
Y
Are the other areas of the lower optional feeder unit normal ?
N
Replace the defective parts.
Y
Check again.

13.3.11. Paper Jam at automatic duplex unit (ADU)


Paper Jam at automatic duplex unit
(Front panel displays "JAM 31" or "JAM32")
Y
Are the automatic duplex unit rollers clean ?
N
Clean the automatic duplex unit rollers.
Y
Are the automatic duplex unit gears normal ?
N
Replace the automatic duplex unit.
Y
Does the ADU jam detect sensor arm actuate its sensor properly ?
N
Correct movement of the sensor arm.
Y
Are the cables and connectors to engine control board normal ?
N
Replace the cable.
Y
* Replace the engine control board.
Y
Does the trouble still occur ?
N
END
Y
Check the automatic duplex unit again.

*
When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

13.3.12. HDD I/O Error

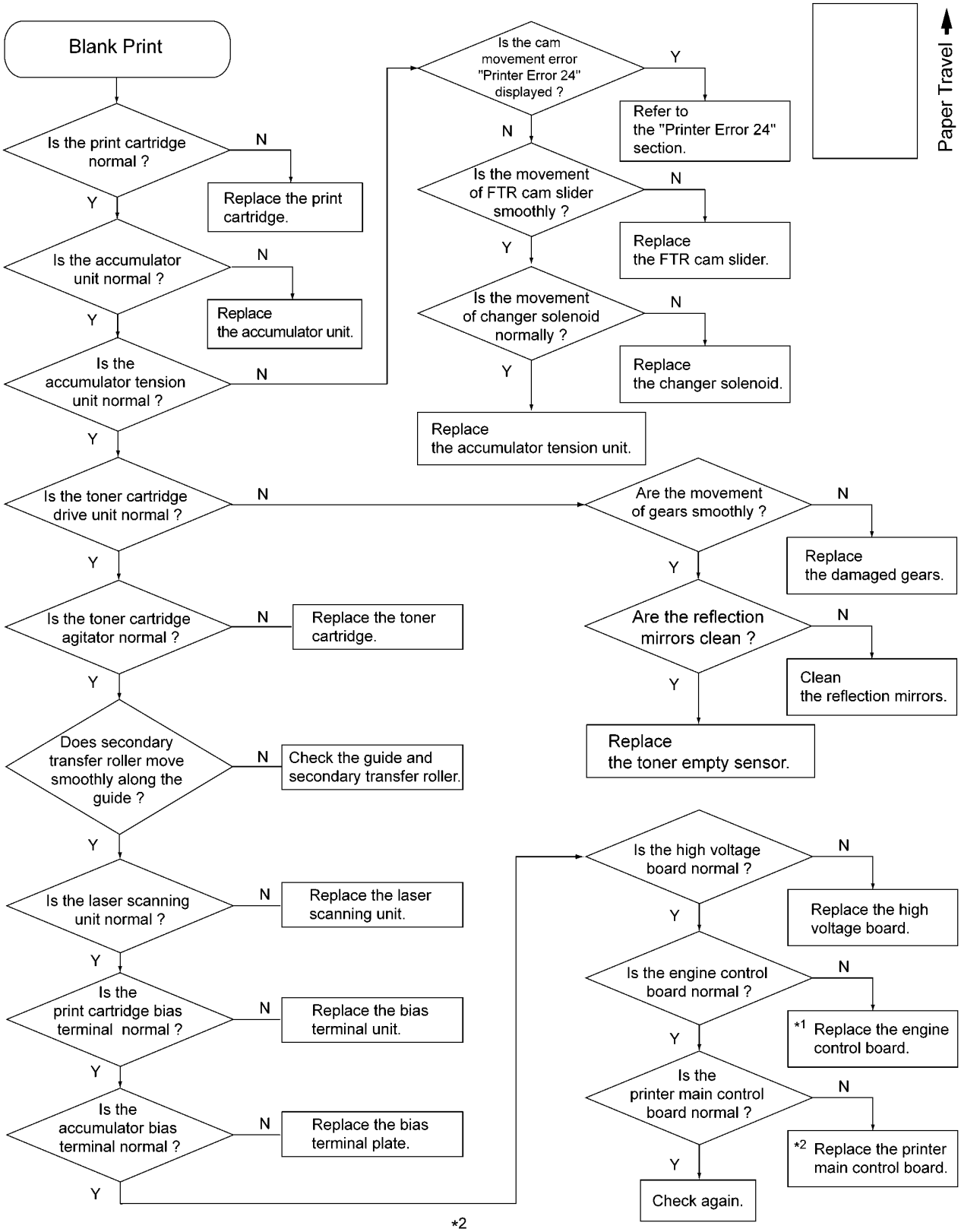


*

When replacing the printer main control board, remove the printer ROM board, SO-DIMM and EEPROM (IC7) from the original printer main control baord, and install them on the new printer main control board.

13.4. Print Quality

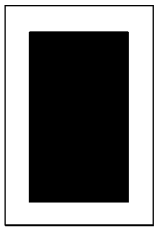
13.4.1. Blank Print

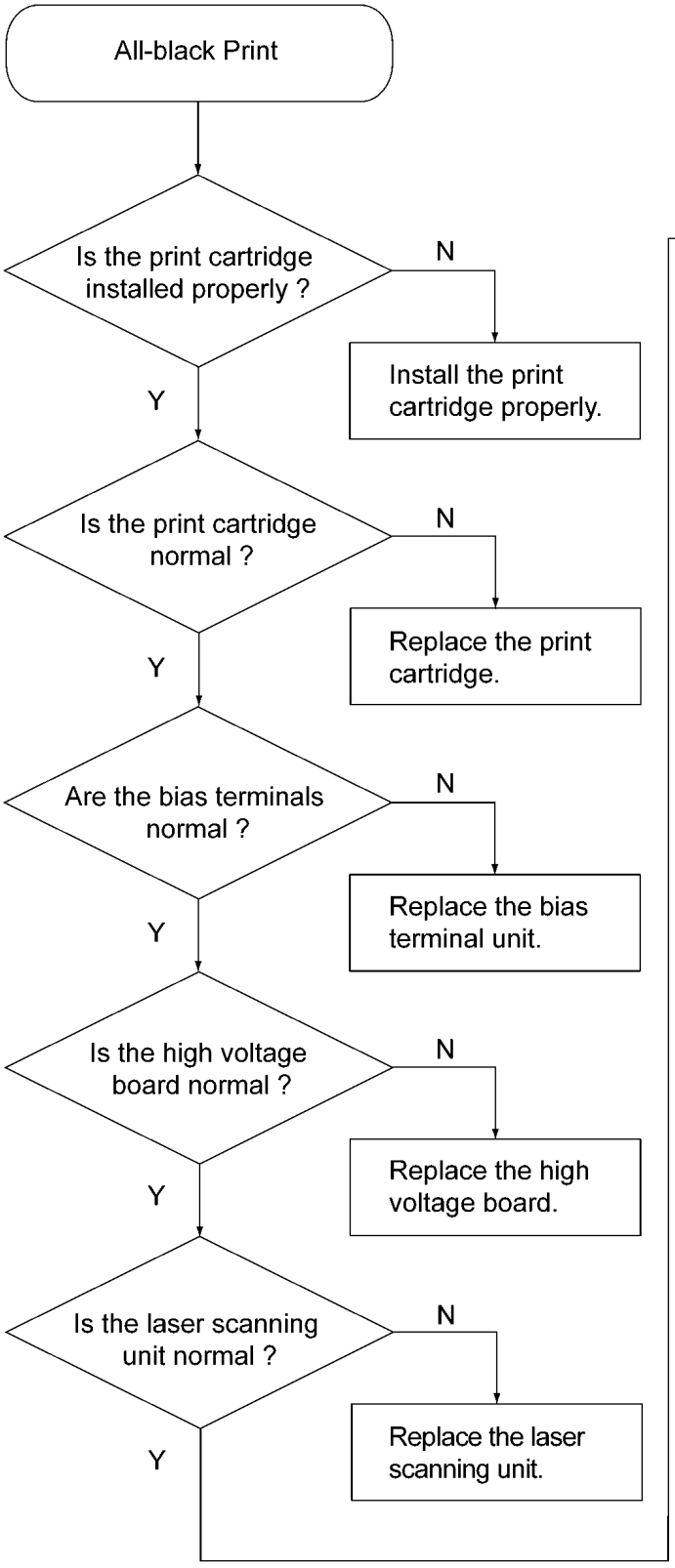


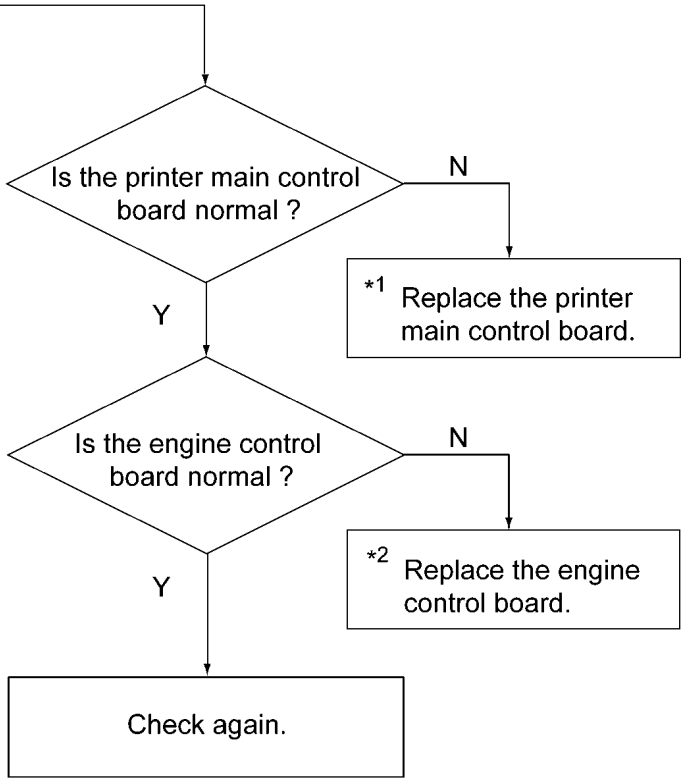
*1
When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and it on the new one.

*2
When replacing the printer main control board, remove the Printer ROM Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

13.4.2. All-black Print



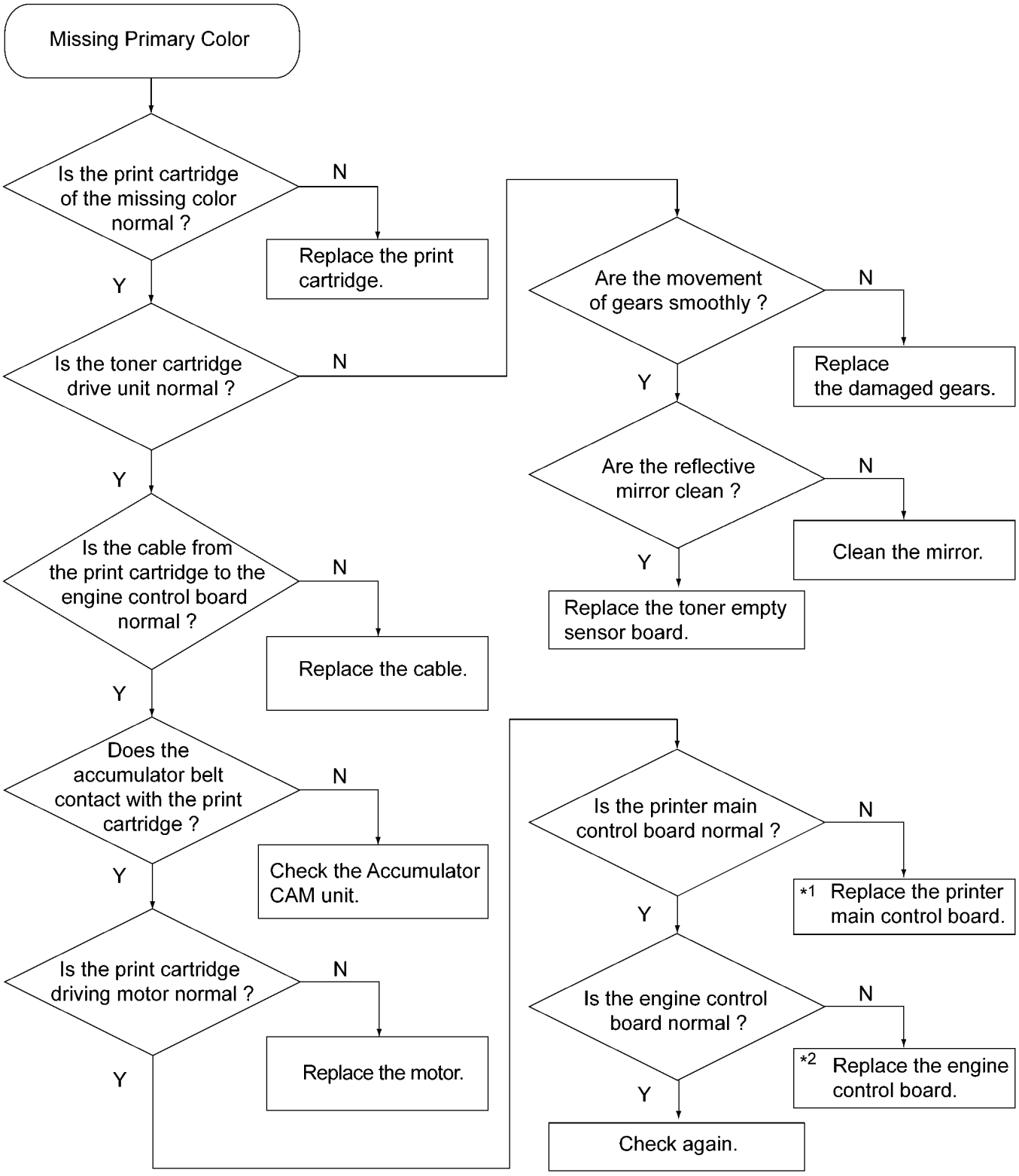




*1 When replacing the printer main control board, remove the Printer ROM Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

*2 When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board and install it on the new one.

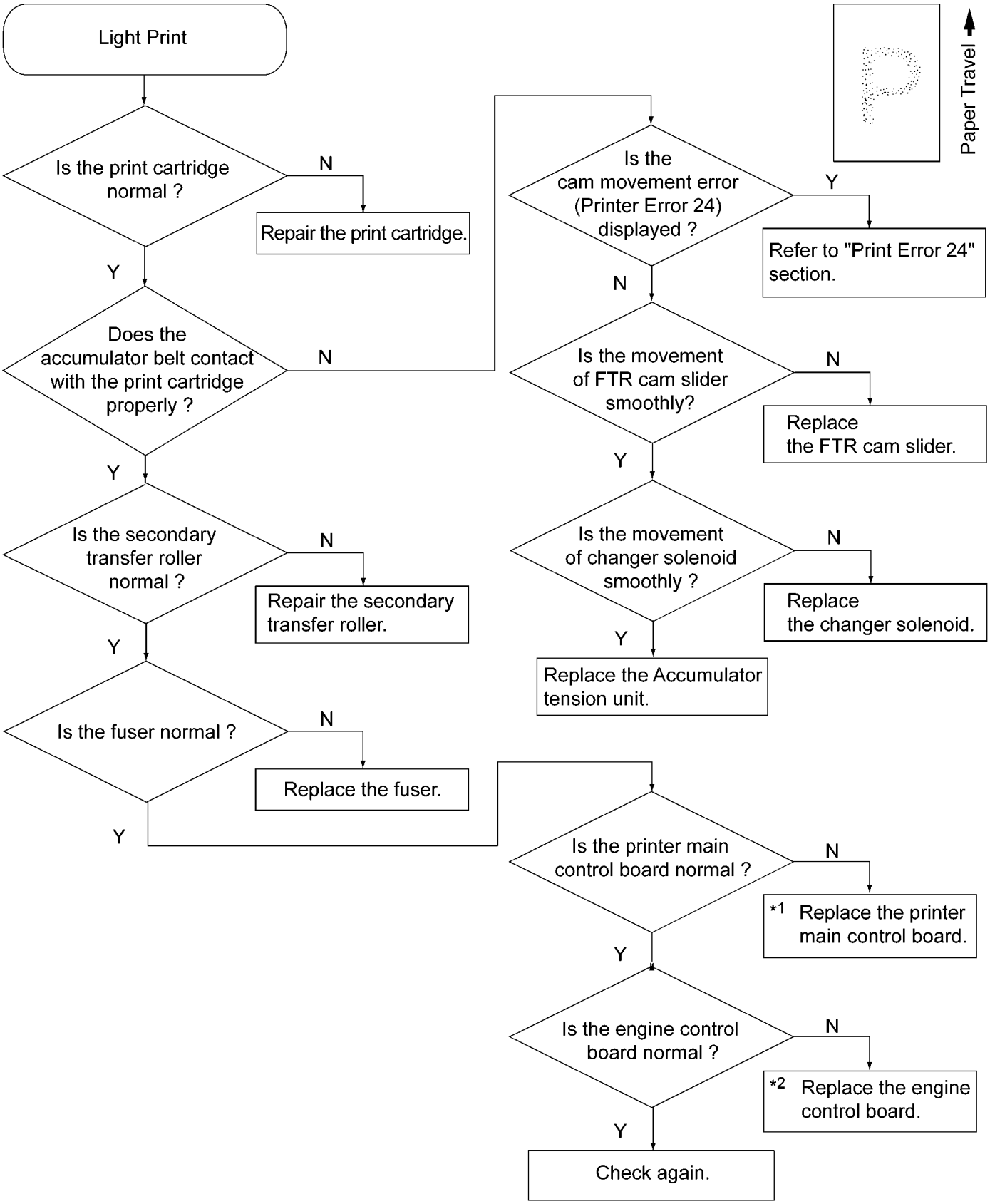
13.4.3. Missing Primary Color



*1 When replacing the printer main control board, remove the Printer ROM Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

*2 When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board and install it on the new one.

13.4.4. Light Print



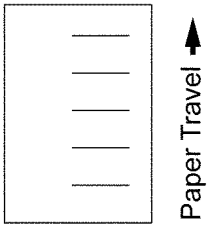
*1 When replacing the printer main control board, remove the Printer ROM Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

*2 When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board and install it on the new one.

13.4.5. Repeated spots or lines on print in-line with each other

Repeated spots or lines on print in-line with each other.

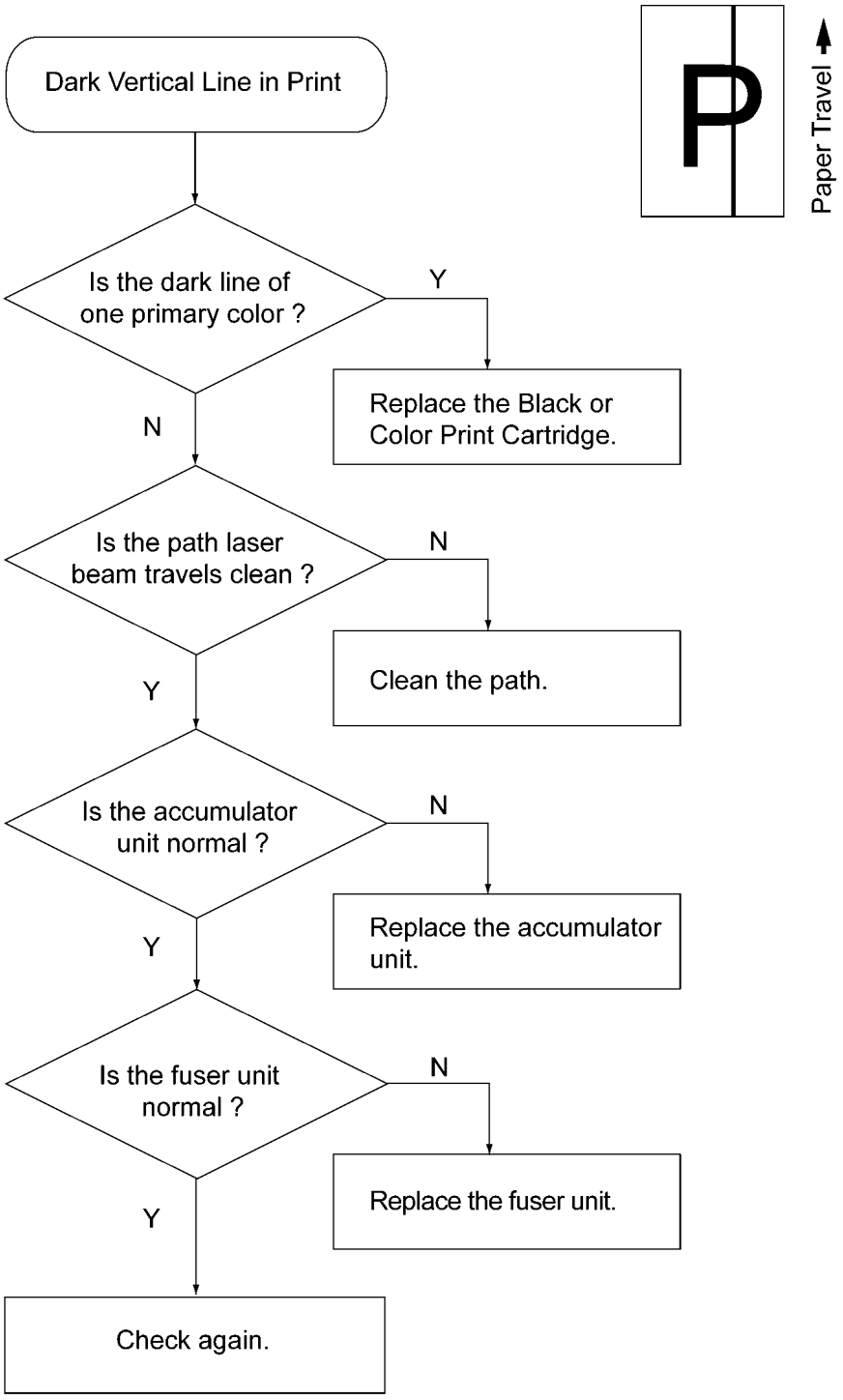
* Measure the spacing between the spots (or thin horizontal lines)



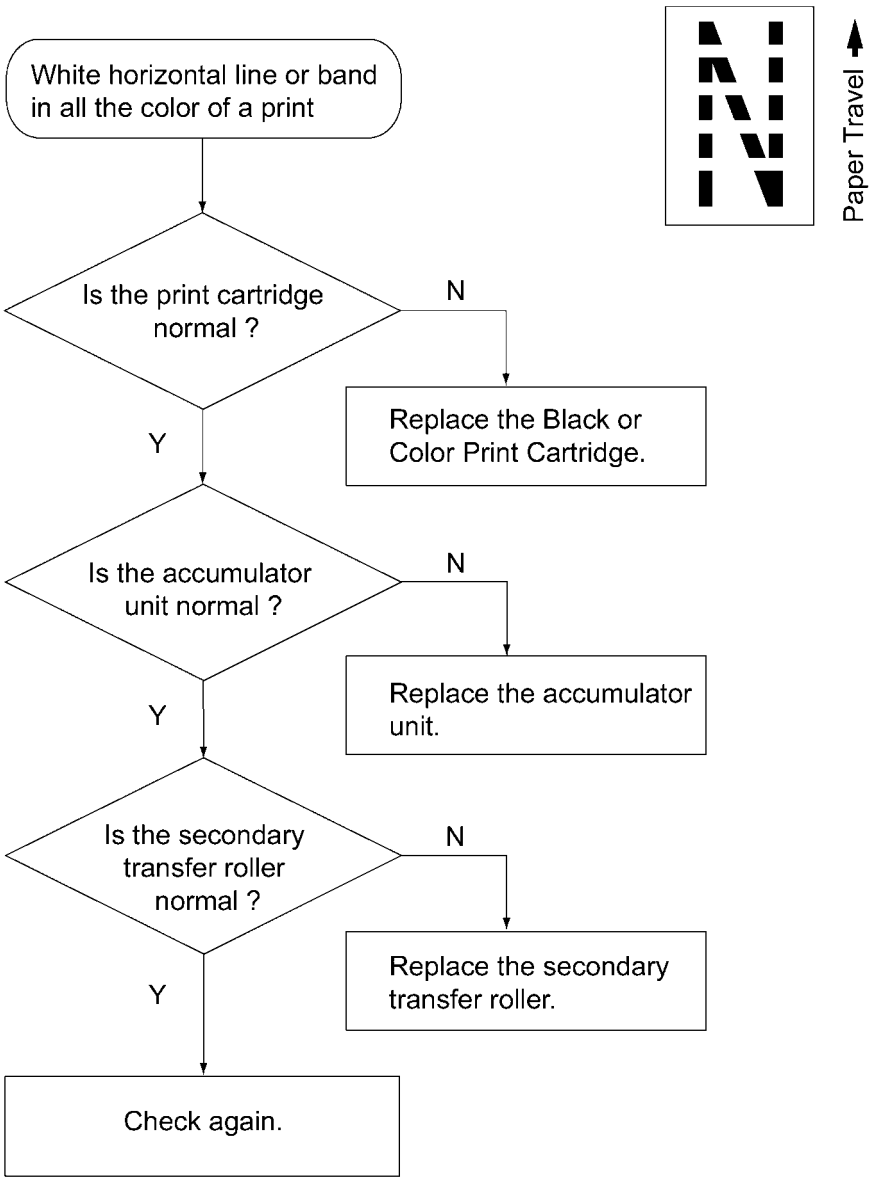
Space	Possible cause and remedy.
28.3 mm (1.114 inch)	Accumulator Tension Roller defect. Replace the Accumulator unit.
31.4 mm (1.236 inch)	Charging Roller defect. Replace the Print Cartridge.
36 mm (1.417 inch)	First Transfer Roller defect. Replace the Accumulator unit.
38 mm (1.496 inch)	Developer Roller defect. Replace the Print Cartridge.
44.7 mm (1.759 inch)	Accumulator Drive Roller defect. Replace the Accumulator unit.
45.6 mm (1.795 inch)	Disposal Toner Screw defect. Replace the Print Cartridge.
46.2 mm (1.82 inch)	Registration Roller defect. Replace the Registration Roller.
69.1 mm (2.721 inch)	Secondary Transfer Roller defect. Replace the Second Transfer Roller.
74.5 mm (2.933 inch)	Supply Roller defect. Replace the Print Cartridge.
75.4 mm (2.968 inch)	OPC Drum defect. Replace the Print Cartridge.
75.4 mm (2.968 inch)	Accumulator Idle Roller defect. Replace the Accumulator unit.
95.0 mm (3.740 inch)	Pressure Roller defect. Replace the Fuser unit.
142 mm (5.6 inch)	Fuser Belt defect. Replace the Fuser unit.

* The distance between the repeating spots indicates the source of the problem.

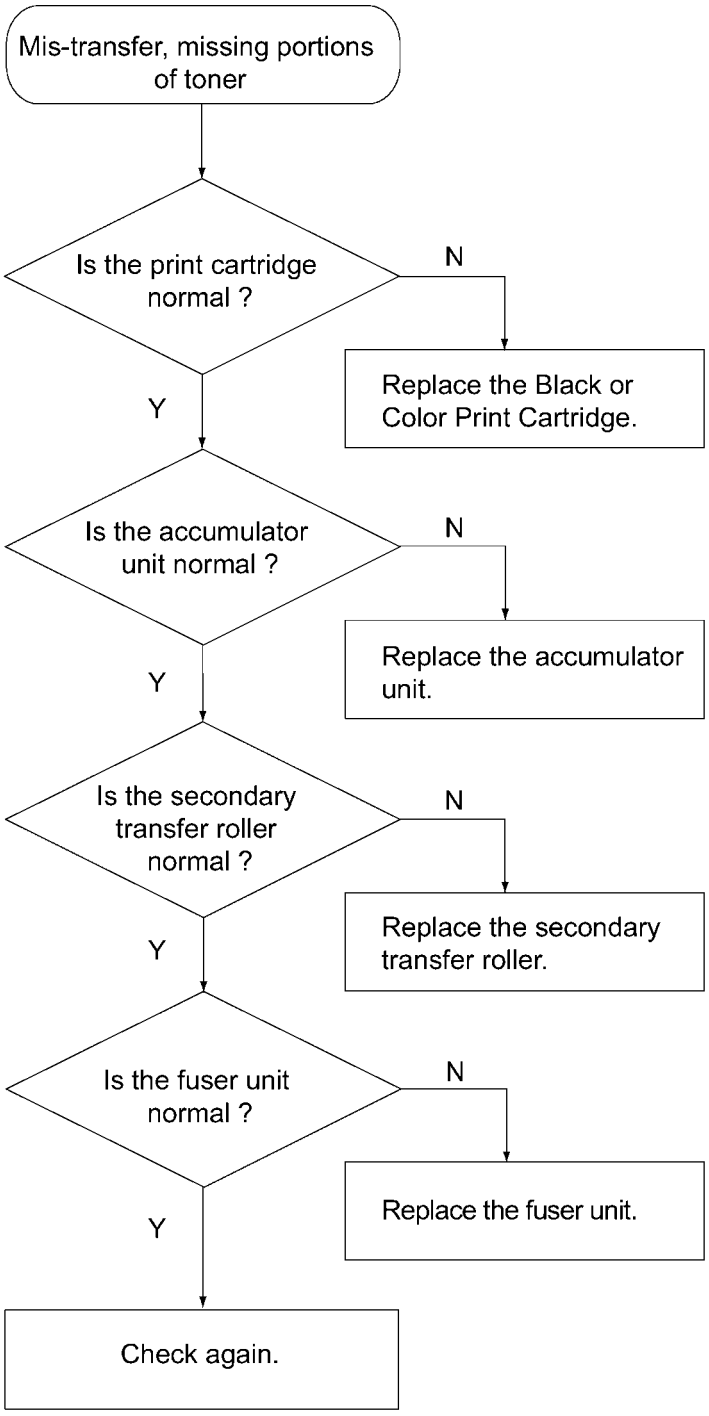
13.4.6. Dark Vertical Line in Print



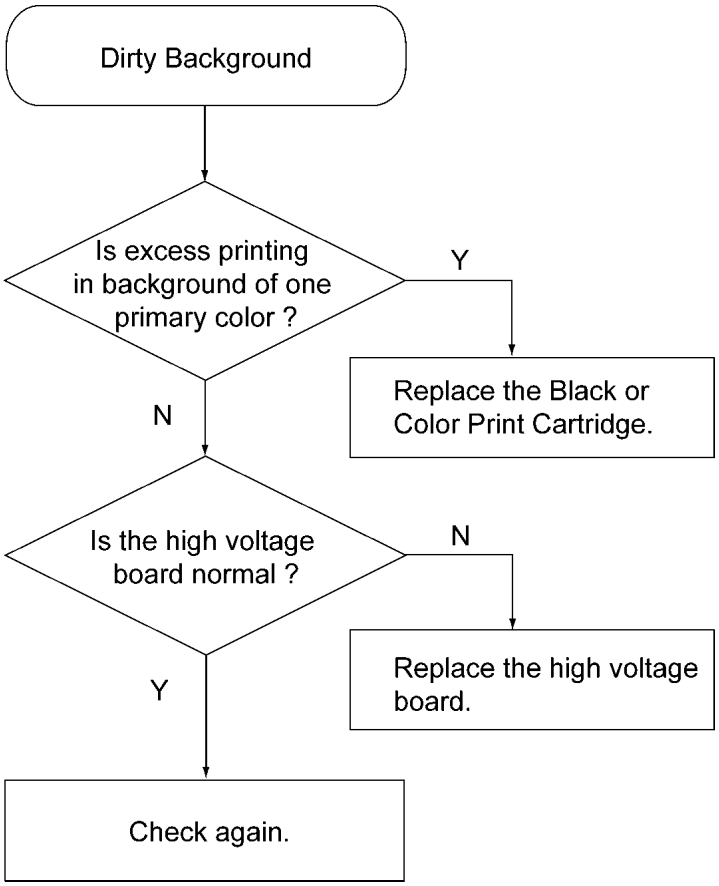
13.4.7. White horizontal line or band in all the color of a print



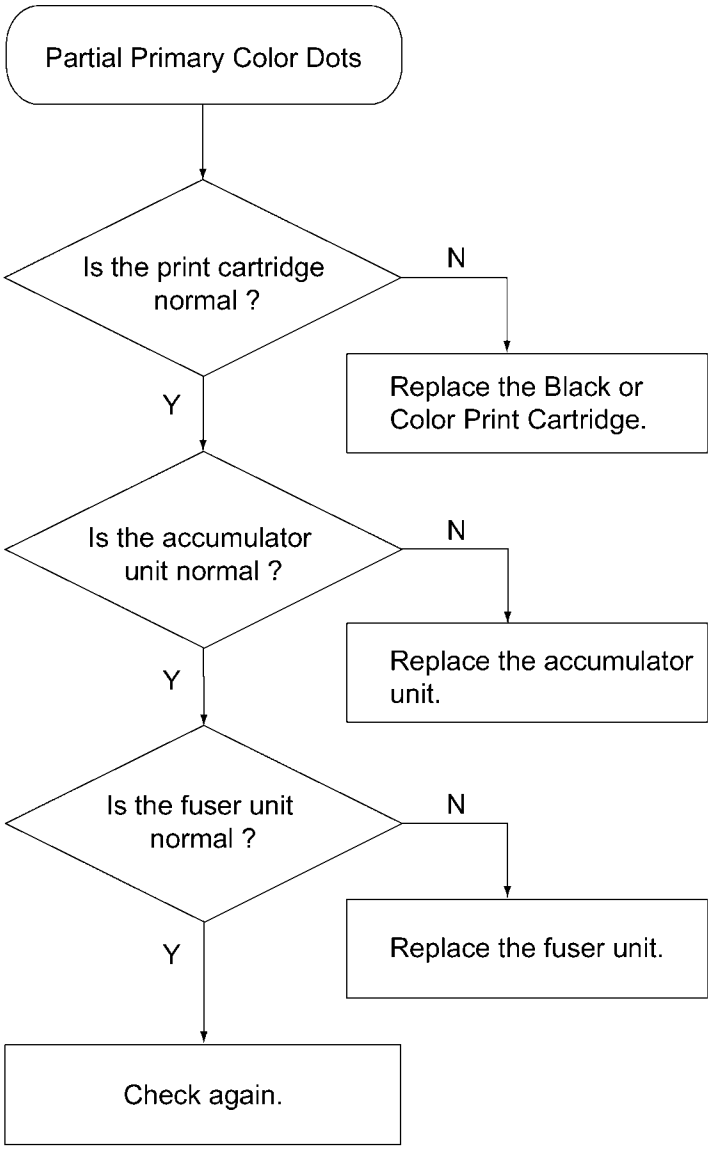
13.4.8. Mis-transfer, missing portions of toner



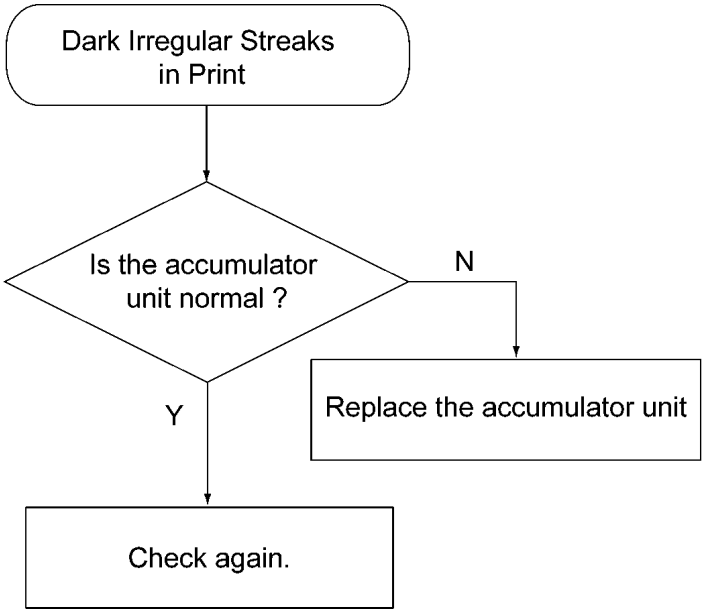
13.4.9. Dirty Background



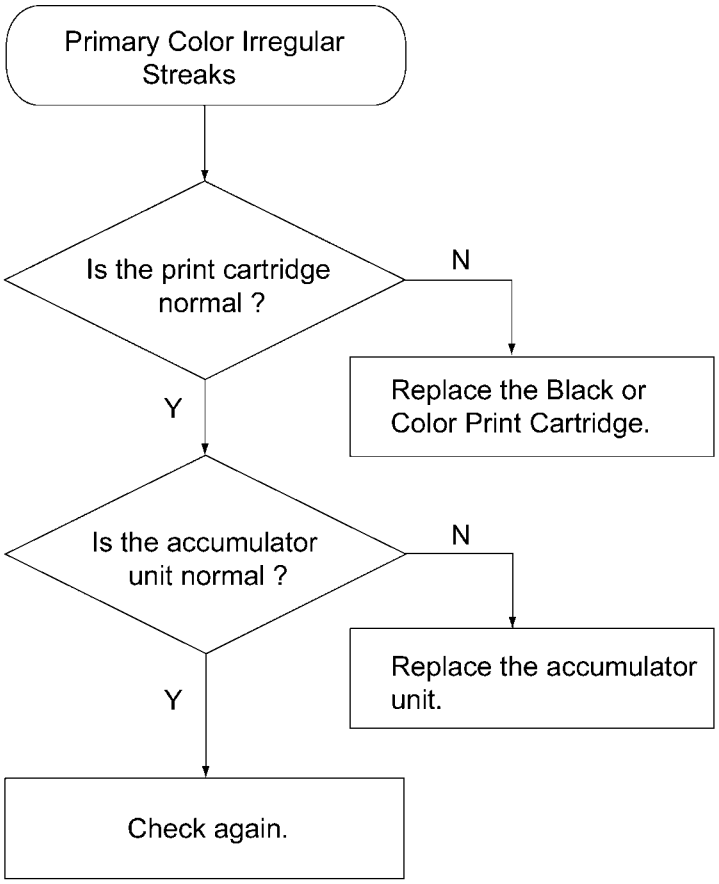
13.4.10. Partial Primary Color Dots



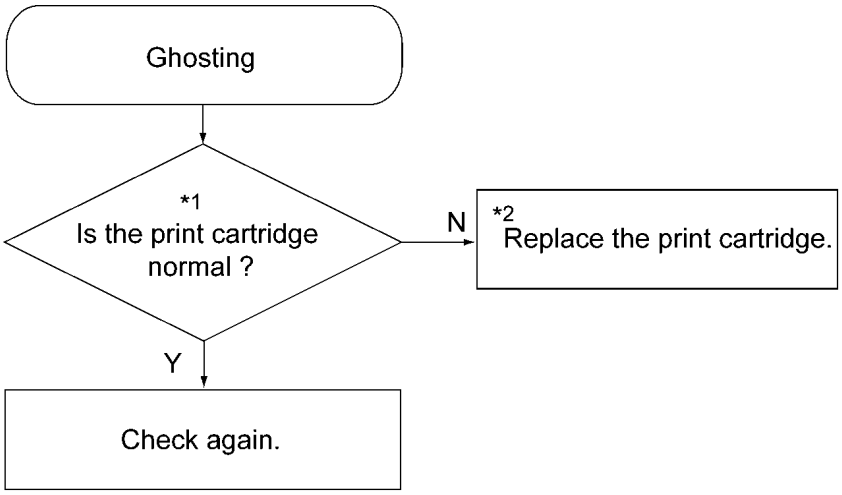
13.4.11. Dark Irregular Streaks in Print



13.4.12. Primary Color Irregular Streaks



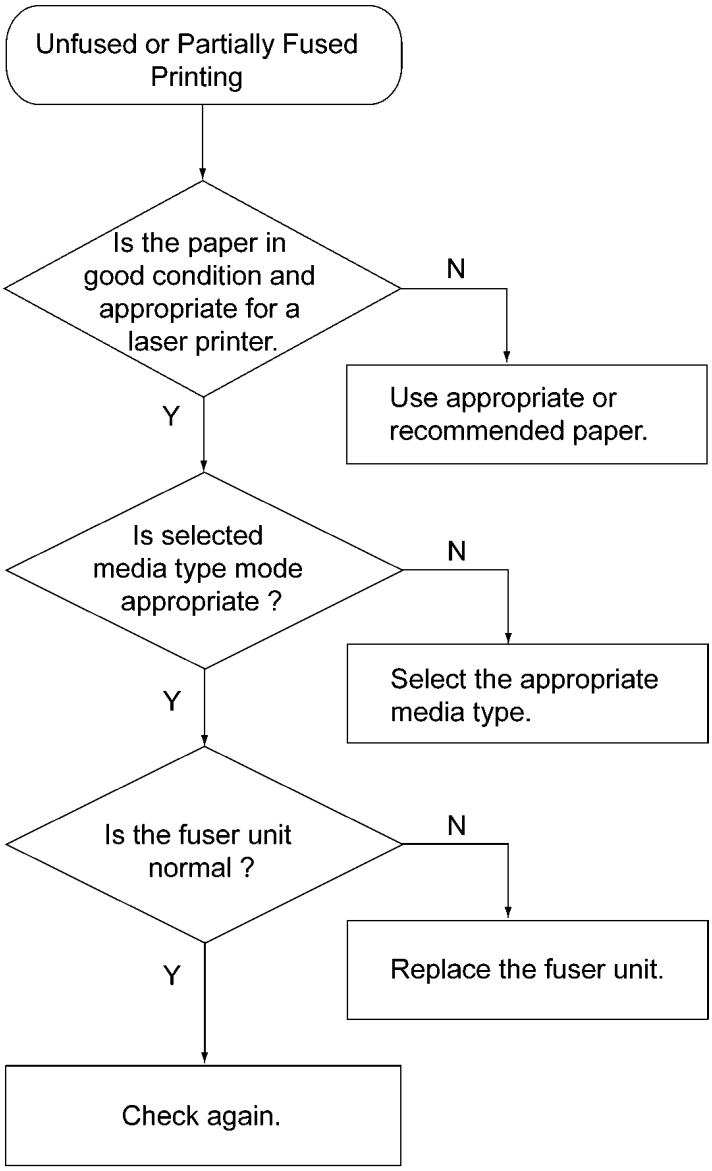
13.4.13. Ghosting



*1 Ghosting with some images is unavoidable because of the color structure of the images. If a color is used at one part of the image area and the same color is used again at a later area, it is very possible to get ghosting of the first image into the second image area after one revolution of the developer roller into the print cartridge. This occurs because the charge that is created from the first use of the color was not totally extinguished, a small residual charge remains associated with the color, resulting in the second use of the color to be darker in the same areas as the first image resulting in the first image ghosting into the second image when the same color is issued.

*2 A new print cartridge exhibits less ghosting.
Ghosting increase as print cartridges age.

13.4.14. Unfused or Partially Fused Printing



13.4.15. Image is skewed on the paper

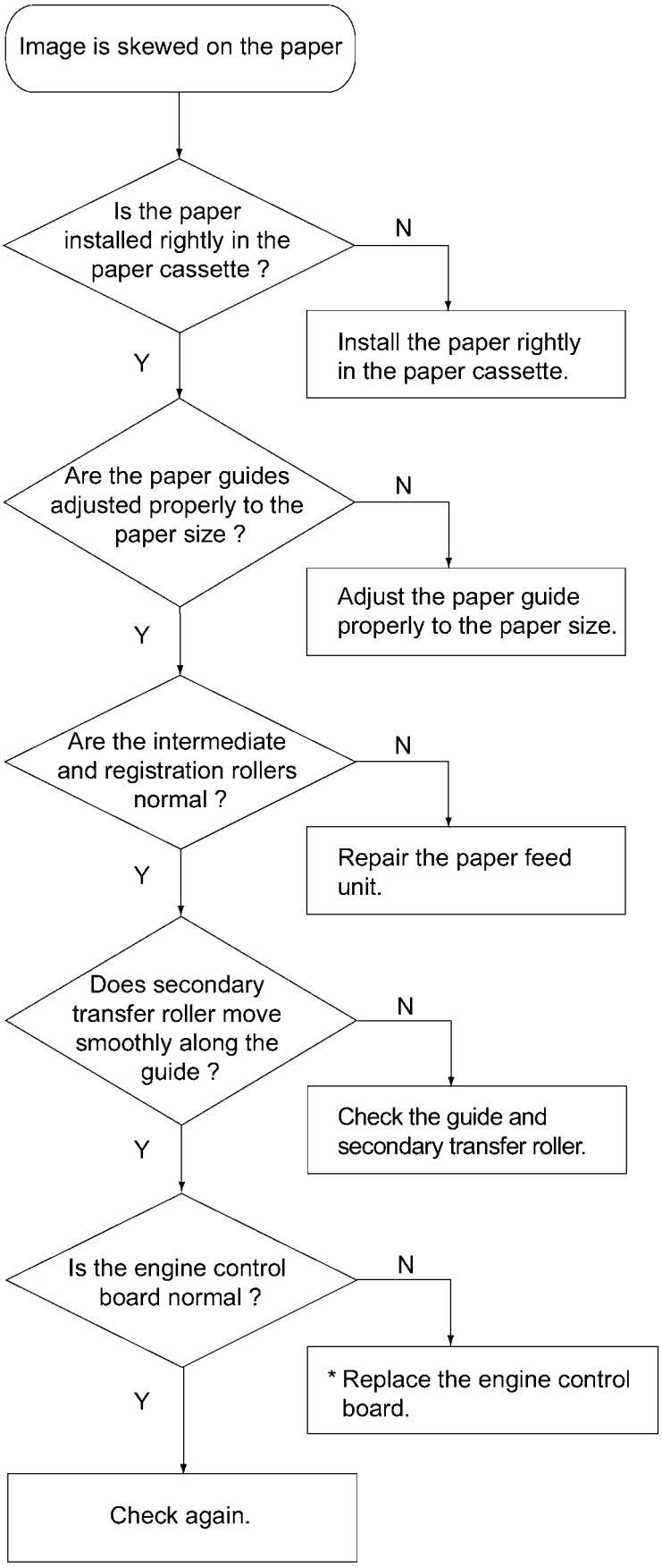
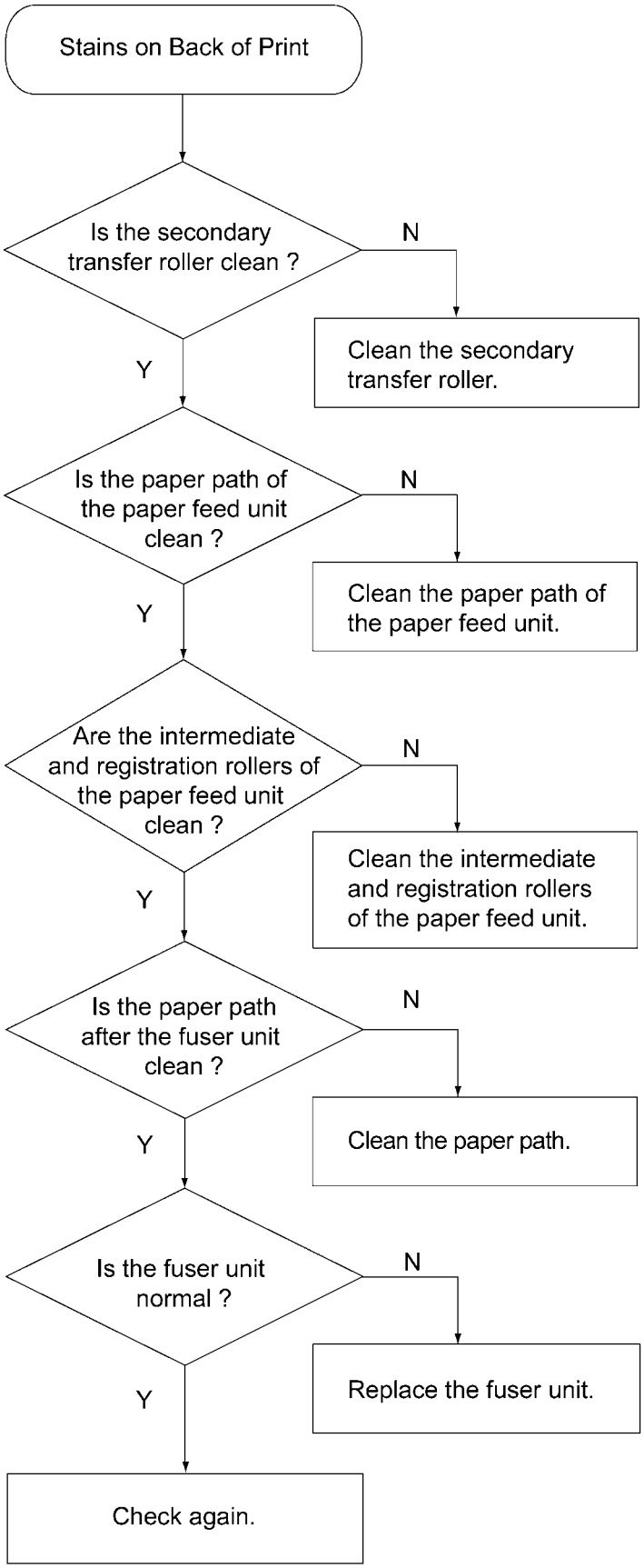


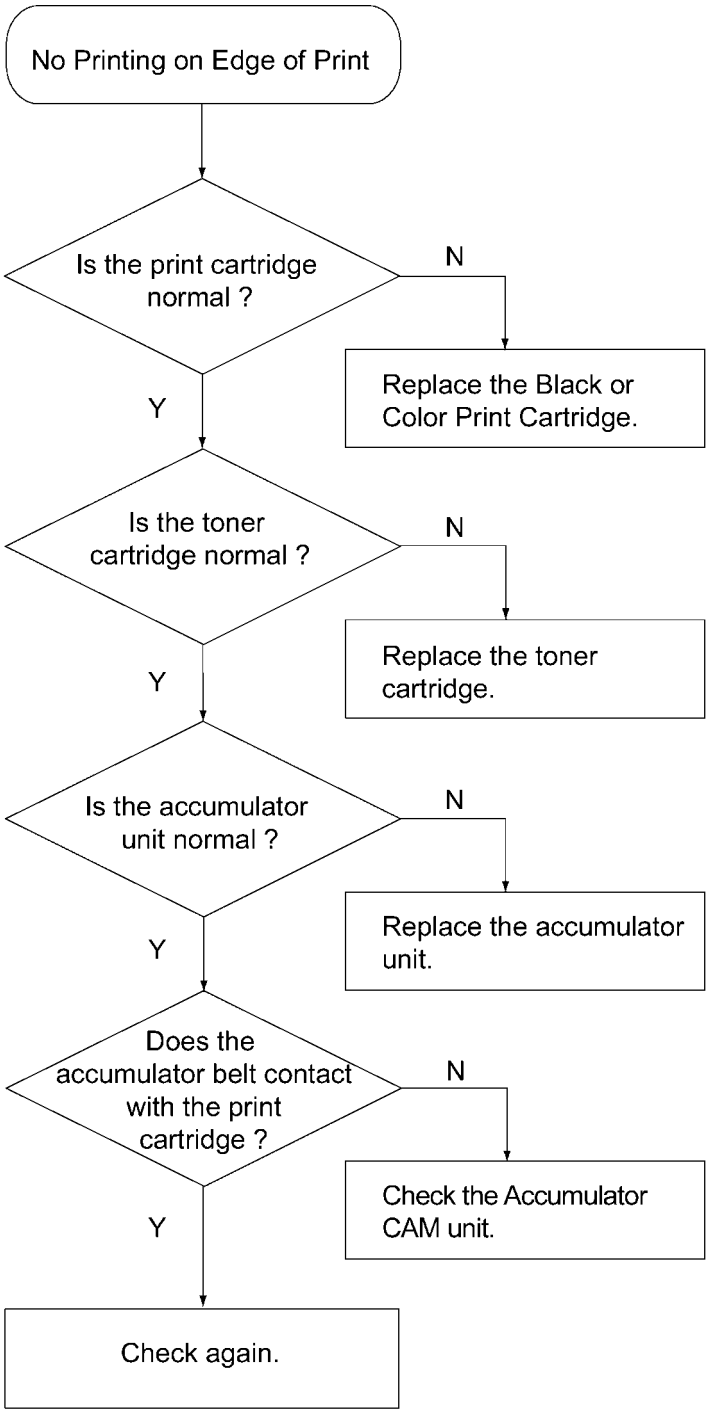
Image is skewed on the paper
Is the paper installed rightly in the paper cassette ?
N
Install the paper rightly in the paper cassette.
Y
Are the paper guides adjusted properly to the paper size ?
N
Adjust the paper guide properly to the paper size.
Y
Are the intermediate and registration rollers normal ?
N
Repair the paper feed unit.
Y
Does secondary transfer roller move smoothly along the guide ?
N
Check the guide and secondary transfer roller.
Y
Is the engine control board normal ?
N
* Replace the engine control board.
Y
Check again.

* When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board and install it on the new one.

13.4.16. Stains on Back of Print


Stains on Back of Print
Is the secondary transfer roller clean ?
N
Clean the secondary transfer roller.
Y
Is the paper path of the paper feed unit clean ?
N
Clean the paper path of the paper feed unit.
Y
Are the intermediate and registration rollers of the paper feed unit clean ?
N
Clean the intermediate and registration rollers of the paper feed unit.
Y
Is the paper path after the fuser unit clean ?
N
Clean the paper path.
Y
Is the fuser unit normal ?
N
Replace the fuser unit.
Y
Check again.

13.4.17. No Printing on Edge of Print



13.4.18. Image is not centered on the print when it should be

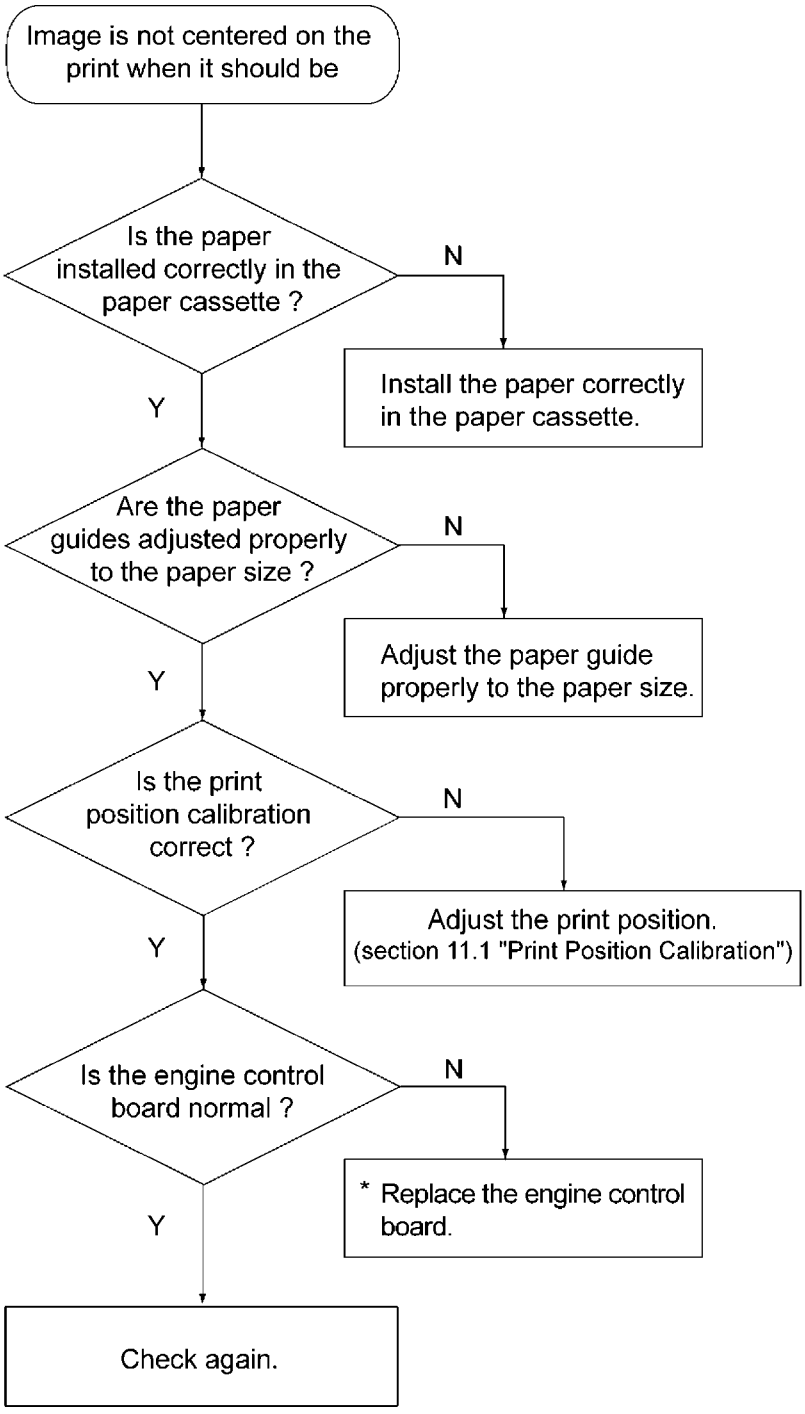


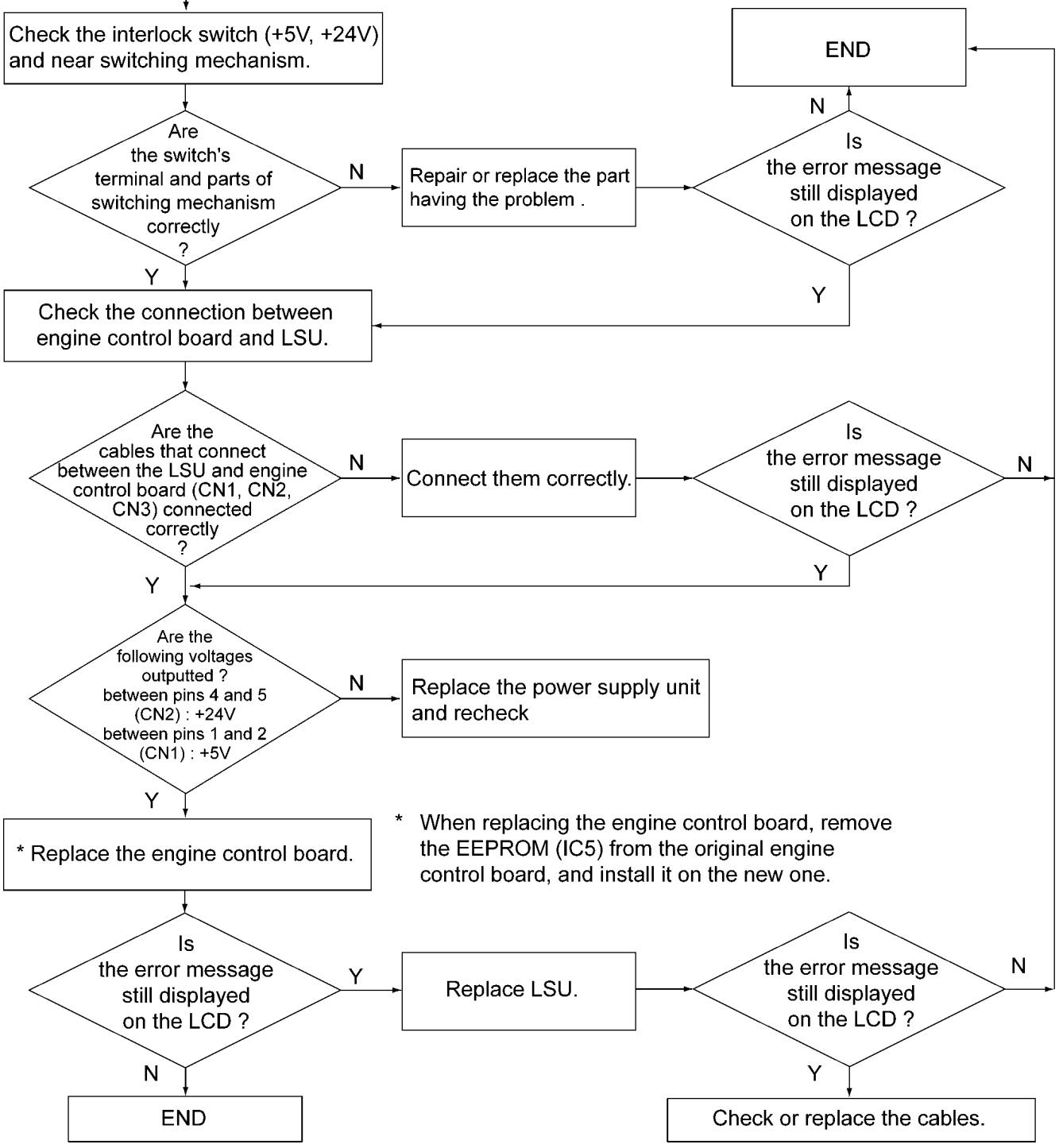
Image is not centered on the print when it should be
Is the paper installed correctly in the paper cassette ?
N
Install the paper correctly in the paper cassette.
Y
Are the paper guides adjusted properly to the paper size ?
N
Adjust the paper guide properly to the paper size.
Y
Is the print position calibration correct ?
N
Adjust the print position. (section 11.1 "Print Position Calibration")
Y
Is the engine control board normal ?
N
* Replace the engine control board.
Y
Check again.

* When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board and install it on the new one.

13.5. Printer Error (Call Service)

13.5.1. Printer Error 10 and Printer Error 11

LCD Message	Possible Cause
Printer Error 10 Printer Error 11	Laser Scanner Motor (Polygon Motor) Error V-Sync (VSZ) Error **

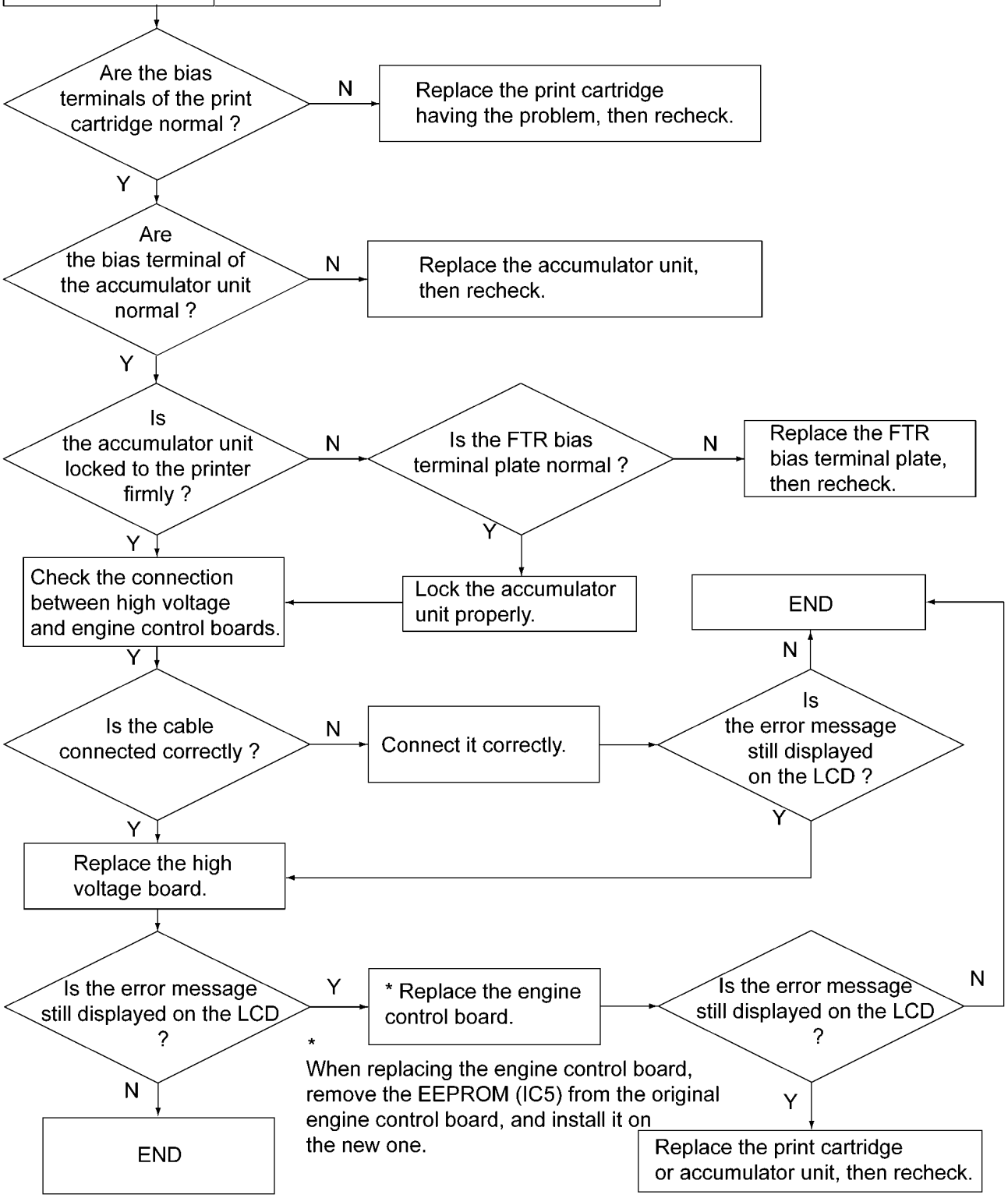

Check the interlock switch (+5V, +24V) and near switching mechanism.
Are the switch's terminal and parts of switching mechanism correctly ?
N
Repair or replace the part having the problem .
Is the error message still displayed on the LCD ?
N
END
Y
Y
Check the connection between engine control board and LSU.
Are the cables that connect between the LSU and engine control board (CN1, CN2, CN3) connected correctly ?
N
Connect them correctly.
Is the error message still displayed on the LCD ?
N
Y
Y
Are the following voltages outputted ? between pins 4 and 5 (CN2) : +24V between pins 1 and 2 (CN1) : +5V
N
Replace the power supply unit and recheck
Y
* Replace the engine control board.
* When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.
Is the error message still displayed on the LCD ?
Y
Replace LSU.
Is the error message still displayed on the LCD ?
N
N
Y
END
Check or replace the cables.

**

When the printer is exposed to a low temperature environment for a long time and is suddenly placed under a normal temperature environment, condensation may occur in the printer. As a result, a printer error may occur. Use care to prevent condensation in the printer. If condensation occurs on the optical lens of the LSU, printer error 11 may occur. After drying the printer, please recheck.

13.5.2. Printer Error 20

LCD Message	Possible Cause
Printer Error 20	Charger Error **


Are the bias terminals of the print cartridge normal ?
N
Replace the print cartridge having the problem, then recheck.
Y
Are the bias terminal of the accumulator unit normal ?
N
Replace the accumulator unit, then recheck.
Y
Is the accumulator unit locked to the printer firmly ?
N
Is the FTR bias terminal plate normal ?
N
Replace the FTR bias terminal plate, then recheck.
Y
Y
Check the connection between high voltage and engine control boards.
Lock the accumulator unit properly.
END
Y
N
Is the cable connected correctly ?
N
Connect it correctly.
Is the error message still displayed on the LCD ?
Y
Y
Replace the high voltage board.
Is the error message still displayed on the LCD ?
Y
* Replace the engine control board.
Is the error message still displayed on the LCD ?
N
N
END
Y
Replace the print cartridge or accumulator unit, then recheck.

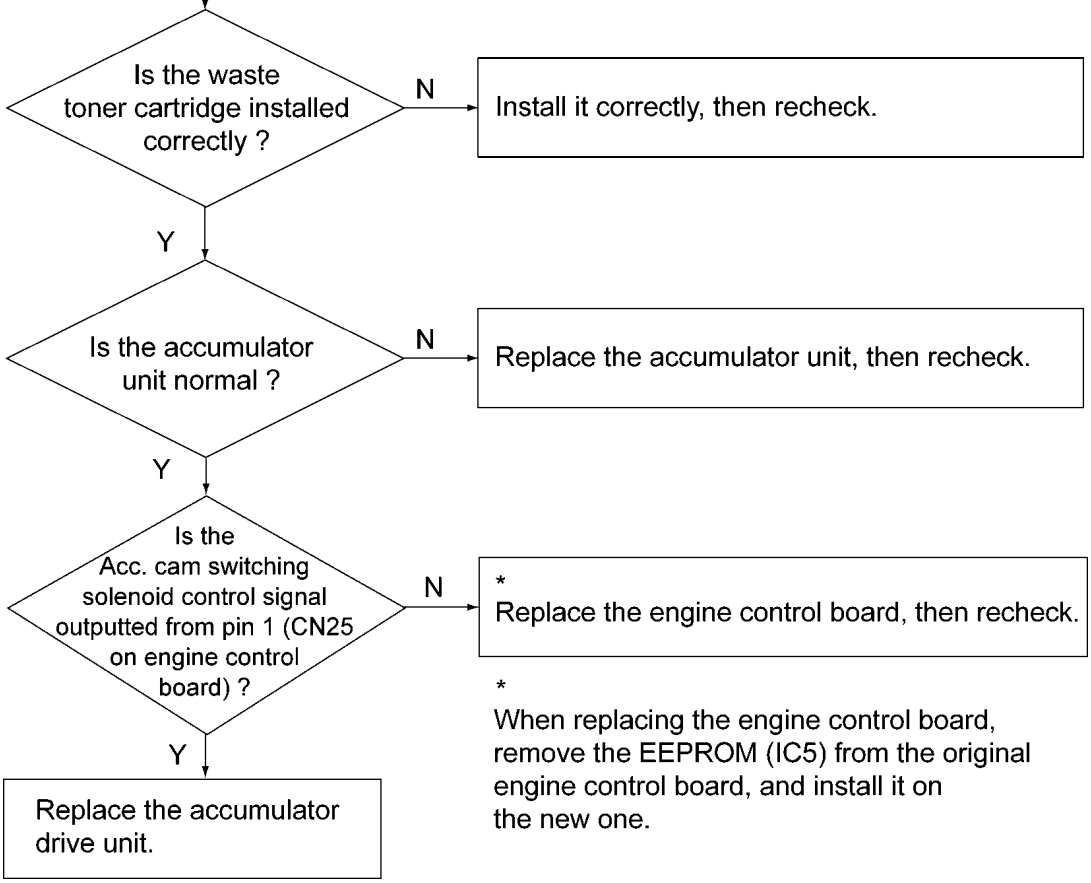
* When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

**

When the printer is exposed to a low temperature environment for a long time and is suddenly placed under a normal temperature environment, condensation may occur in the printer. As a result, a printer error may occur. Use care to prevent condensation in the printer. If condensation occurs on/in the print cartridge, printer error 20 may occur. After drying the printer, please recheck.

13.5.3. Printer Error 24

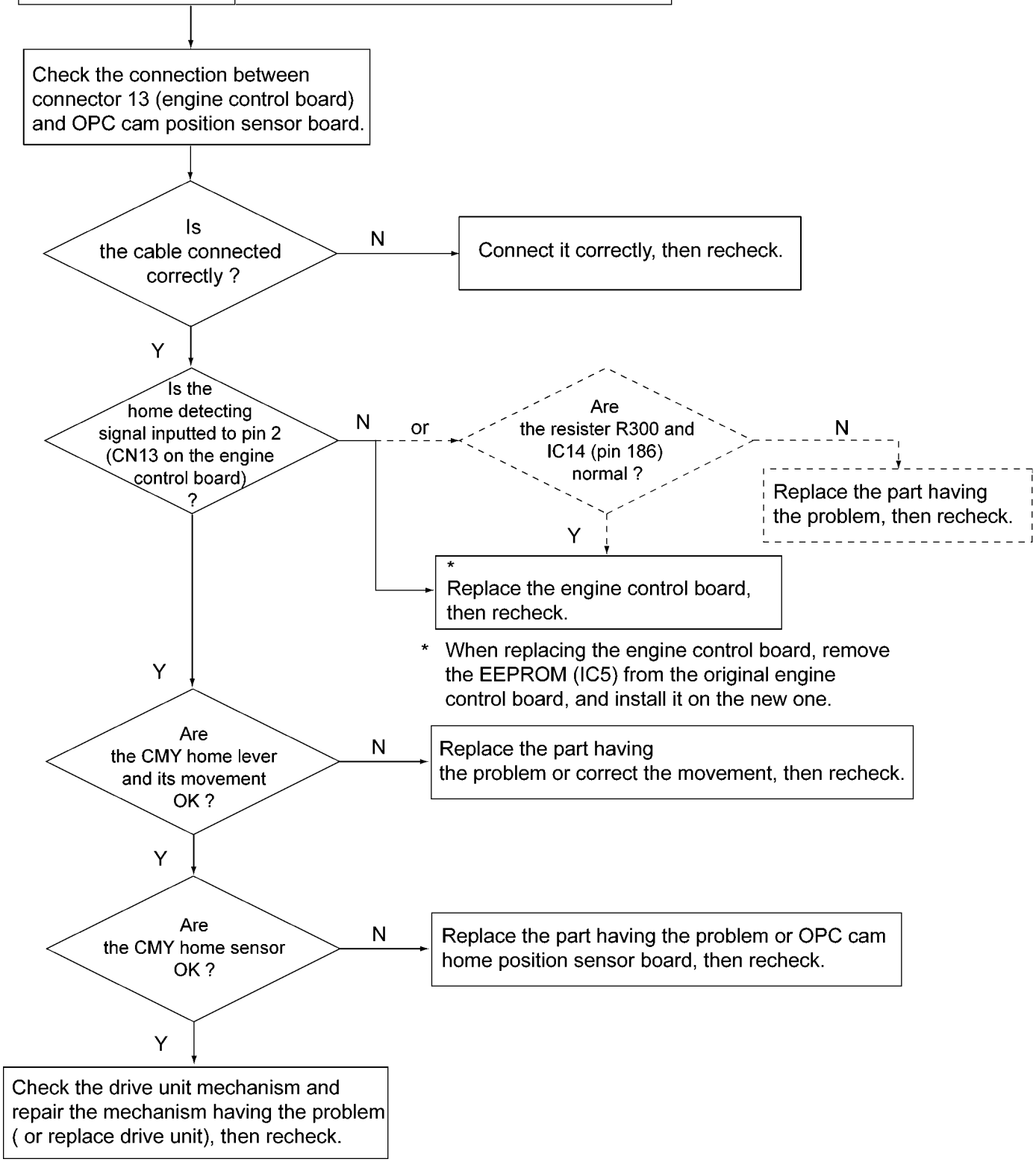
LCD Message	Possible Cause
Printer Error 24	Accumulator CAM Movement Error


Is the waste toner cartridge installed correctly ?
N
Install it correctly, then recheck.
Y
Is the accumulator unit normal ?
N
Replace the accumulator unit, then recheck.
Y
Is the Acc. cam switching solenoid control signal outputted from pin 1 (CN25 on engine control board) ?
N
*
Replace the engine control board, then recheck.
Y
Replace the accumulator drive unit.

*
When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

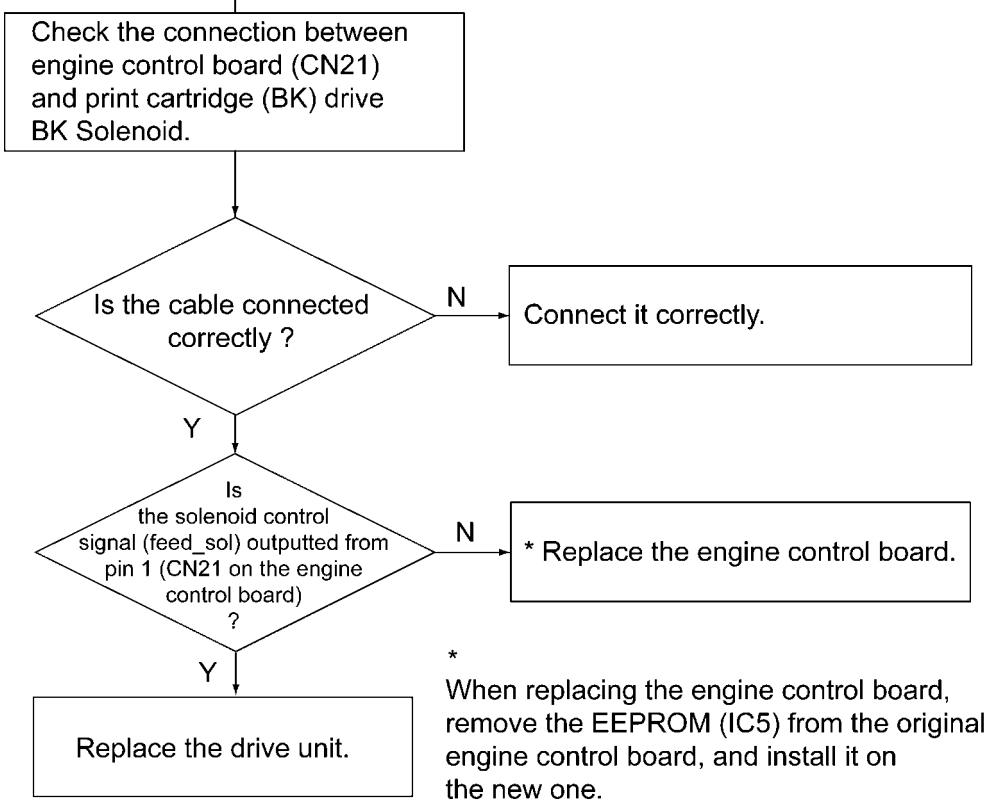
13.5.4. Printer Error 35

LCD Message	Possible Cause
Printer Error 35	Color Print Cartridge home detection error


Check the connection between connector 13 (engine control board) and OPC cam position sensor board.
Is the cable connected correctly ?
N
Connect it correctly, then recheck.
Y
Is the home detecting signal inputted to pin 2 (CN13 on the engine control board) ?
N
or
Are the resister R300 and IC14 (pin 186) normal ?
N
Replace the part having the problem, then recheck.
Y
* Replace the engine control board, then recheck.
* When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.
Y
Are the CMY home lever and its movement OK ?
N
Replace the part having the problem or correct the movement, then recheck.
Y
Are the CMY home sensor OK ?
N
Replace the part having the problem or OPC cam home position sensor board, then recheck.
Y
Check the drive unit mechanism and repair the mechanism having the problem (or replace drive unit), then recheck.

13.5.5. Printer Error 36

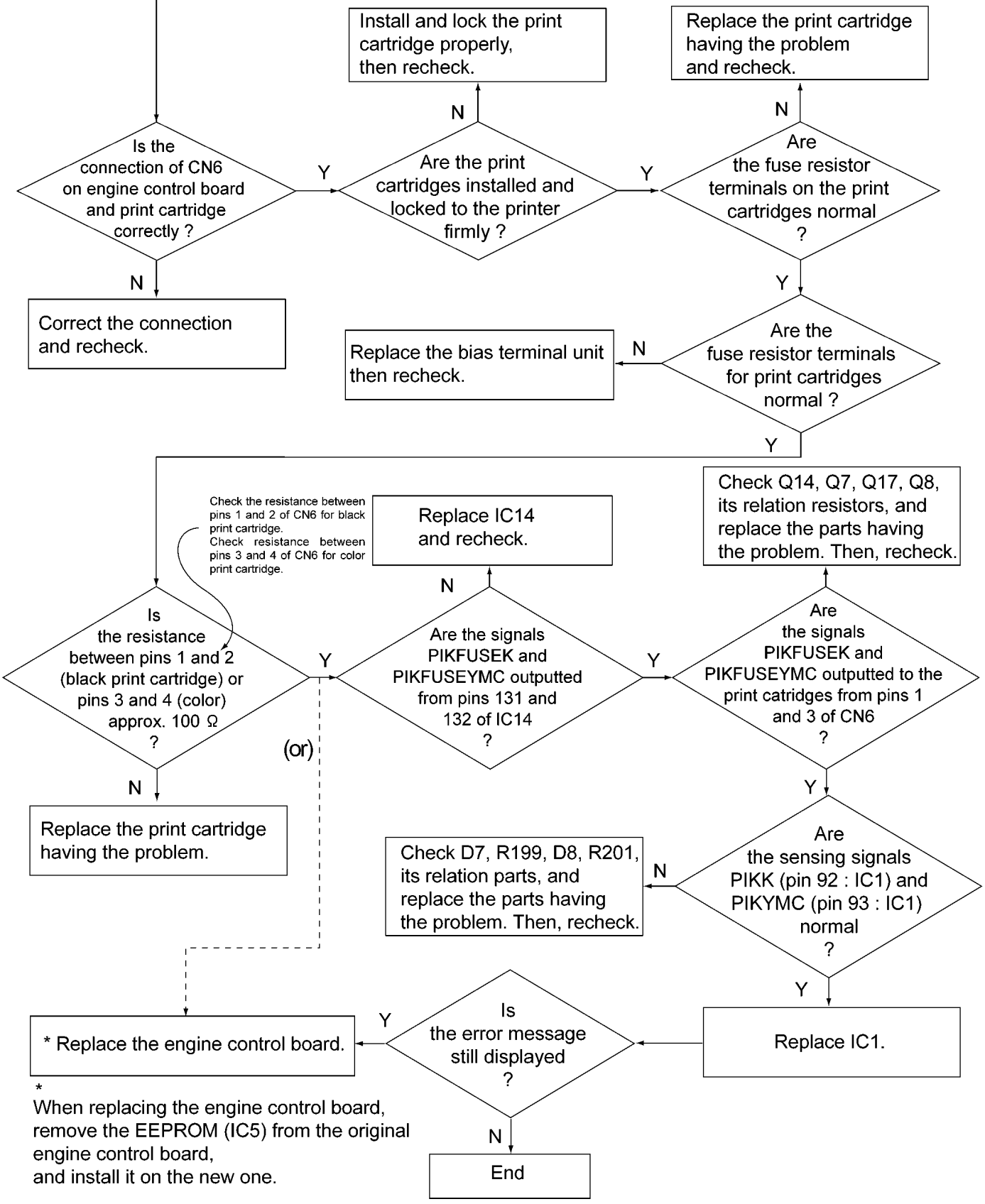
LCD Message	Possible Cause
Printer Error 36	Print Cartridge (BK) drive BK Solenoid error


Check the connection between engine control board (CN21) and print cartridge (BK) drive BK Solenoid.
Is the cable connected correctly ?
N
Connect it correctly.
Y
Is the solenoid control signal (feed_sol) outputted from pin 1 (CN21 on the engine control board) ?
N
* Replace the engine control board.
Y
Replace the drive unit.

* When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

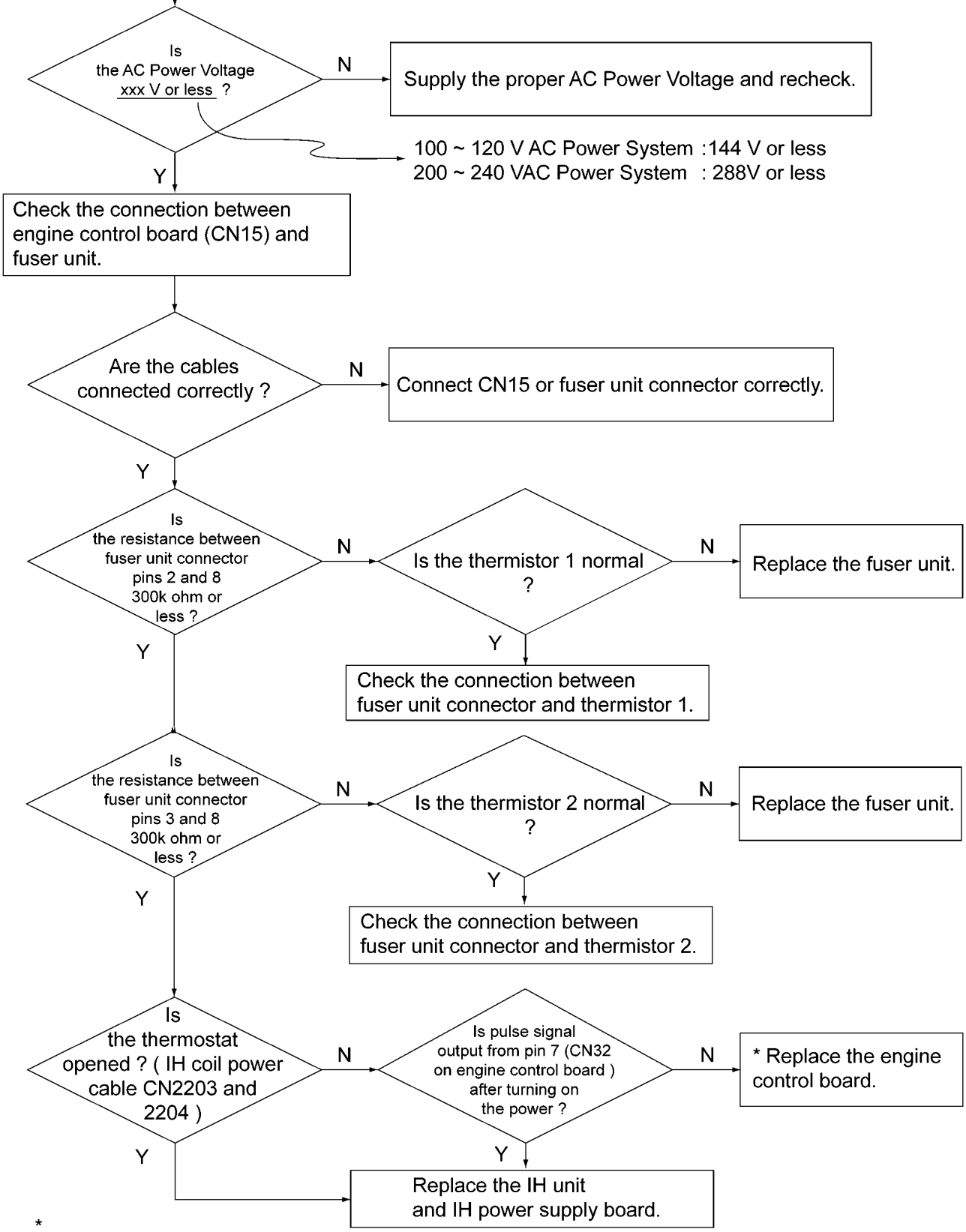
13.5.6. Printer Error 37 and Printer Error 38

LCD Message	Possible Cause
Printer Error 37 Printer Error 38	The virgin detection fuse is not blown out correctly.


Is the connection of CN6 on engine control board and print cartridge correctly ?
Y
Are the print cartridges installed and locked to the printer firmly ?
Y
Are the fuse resistor terminals on the print cartridges normal ?
N
Install and lock the print cartridge properly, then recheck.
N
Replace the print cartridge having the problem and recheck.
N
Correct the connection and recheck.
Y
Are the fuse resistor terminals for print cartridges normal ?
N
Replace the bias terminal unit then recheck.
Y
Check the resistance between pins 1 and 2 of CN6 for black print cartridge.
Check resistance between pins 3 and 4 of CN6 for color print cartridge.
Is the resistance between pins 1 and 2 (black print cartridge) or pins 3 and 4 (color) approx. 100 Ω ?
Y
Are the signals PIKFUSEK and PIKFUSEYMC outputted from pins 131 and 132 of IC14 ?
Y
Are the signals PIKFUSEK and PIKFUSEYMC outputted to the print catridges from pins 1 and 3 of CN6 ?
N
Replace IC14 and recheck.
N
Check Q14, Q7, Q17, Q8, its relation resistors, and replace the parts having the problem. Then, recheck.
N
Replace the print cartridge having the problem.
(or)
Y
Are the sensing signals PIKK (pin 92 : IC1) and PIKYMC (pin 93 : IC1) normal ?
N
Check D7, R199, D8, R201, its relation parts, and replace the parts having the problem. Then, recheck.
Y
Replace IC1.
Y
Is the error message still displayed ?
Y
* Replace the engine control board.
N
End
*
When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

13.5.7. Printer Error 40 and Printer Error 43

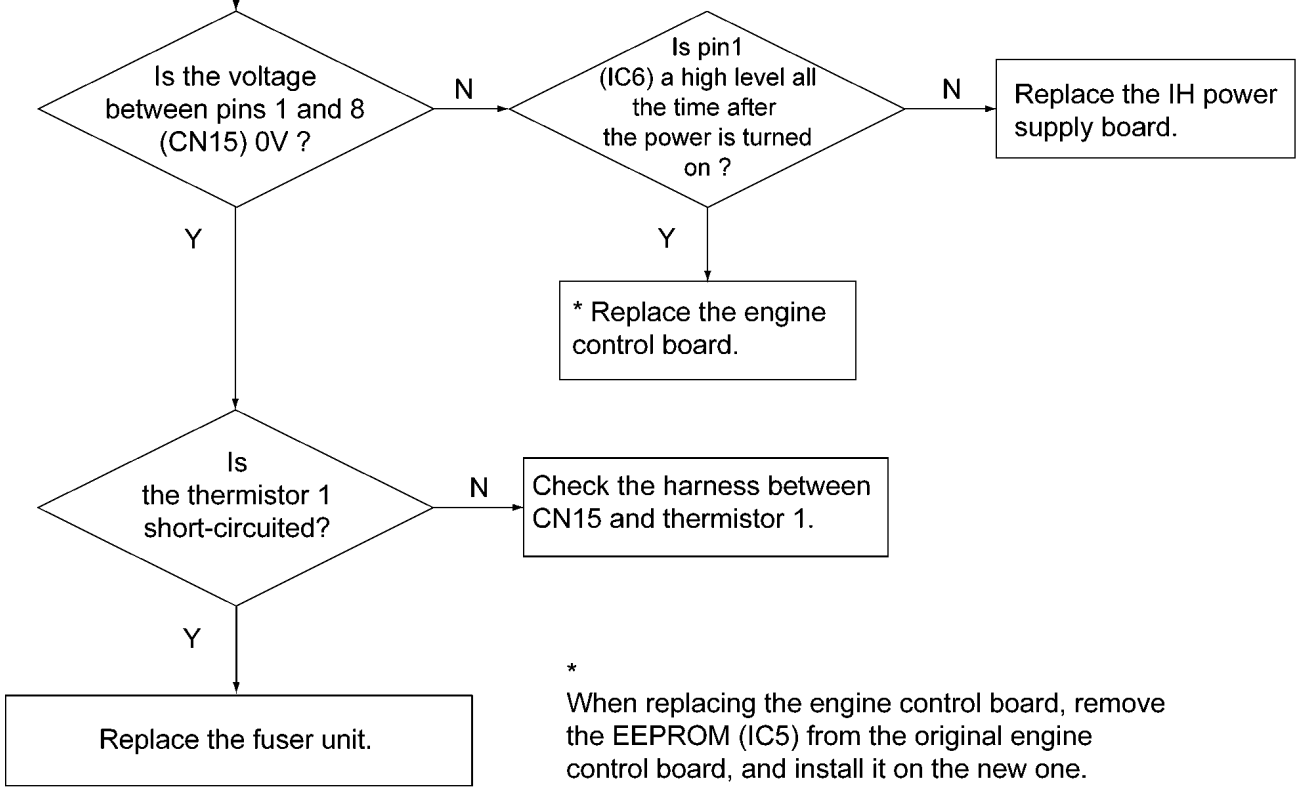
LCD Message	Possible Cause
Printer Error 40 Printer Error 43	Fuser Low Temperature or Fuser Temperature Rising Error


Is the AC Power Voltage xxx V or less ?
N
Supply the proper AC Power Voltage and recheck.
100 ~ 120 V AC Power System :144 V or less
200 ~ 240 VAC Power System : 288V or less
Y
Check the connection between engine control board (CN15) and fuser unit.
Are the cables connected correctly ?
N
Connect CN15 or fuser unit connector correctly.
Y
Is the resistance between fuser unit connector pins 2 and 8 300k ohm or less ?
N
Is the thermistor 1 normal ?
N
Replace the fuser unit.
Y
Y
Check the connection between fuser unit connector and thermistor 1.
Is the resistance between fuser unit connector pins 3 and 8 300k ohm or less ?
N
Is the thermistor 2 normal ?
N
Replace the fuser unit.
Y
Y
Check the connection between fuser unit connector and thermistor 2.
Is the thermostat opened ? (IH coil power cable CN2203 and 2204)
N
Is pulse signal output from pin 7 (CN32 on engine control board) after turning on the power ?
N
* Replace the engine control board.
Y
Y
Replace the IH unit and IH power supply board.

*
When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

13.5.8. Printer Error 41

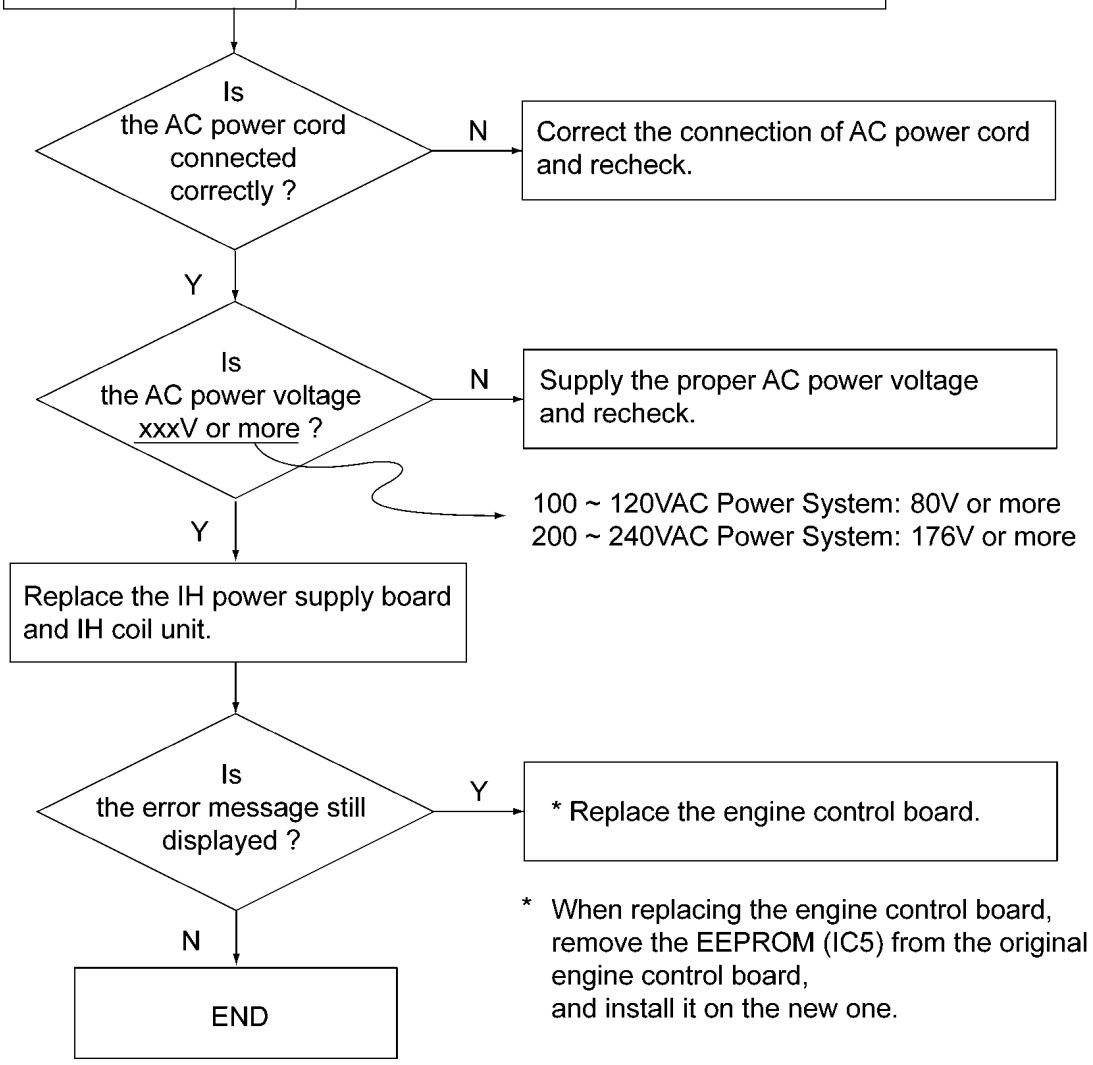
LCD Message	Possible Cause
Printer Error 41	Fuser High Temperature Error


Is the voltage between pins 1 and 8 (CN15) 0V ?
N
Is pin1 (IC6) a high level all the time after the power is turned on ?
N
Replace the IH power supply board.
Y
Y
* Replace the engine control board.
Is the thermistor 1 short-circuited?
N
Check the harness between CN15 and thermistor 1.
Y
Replace the fuser unit.

*
When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

13.5.9. Printer Error 45

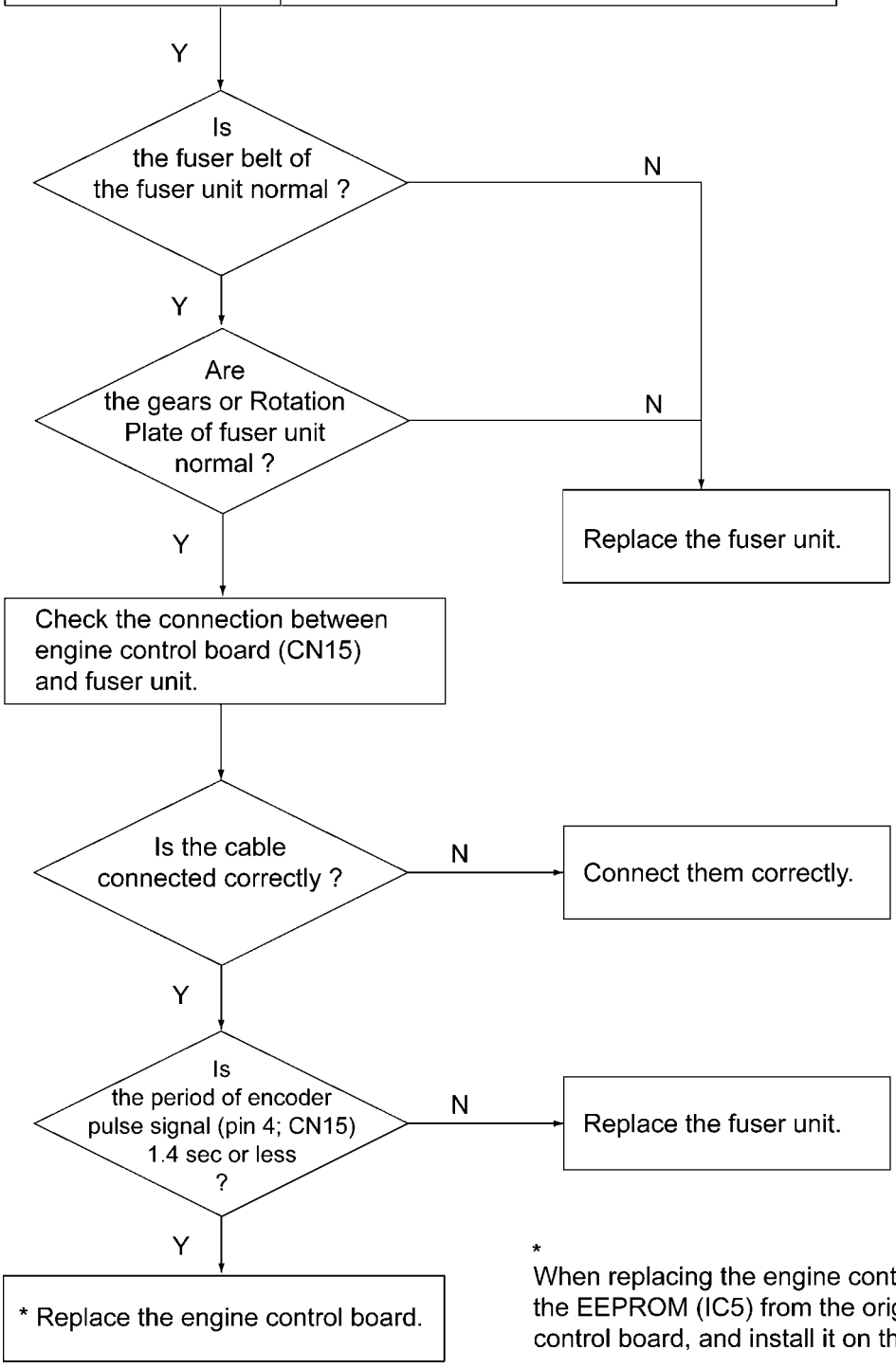
LCD Message	Possible Cause
Printer Error 45	Low Voltage Error


Is the AC power cord connected correctly ?
N
Correct the connection of AC power cord and recheck.
Y
Is the AC power voltage xxxV or more ?
N
Supply the proper AC power voltage and recheck.
100 ~ 120VAC Power System: 80V or more
200 ~ 240VAC Power System: 176V or more
Y
Replace the IH power supply board and IH coil unit.
Is the error message still displayed ?
Y
* Replace the engine control board.
N
END

* When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

13.5.10. Printer Error 46

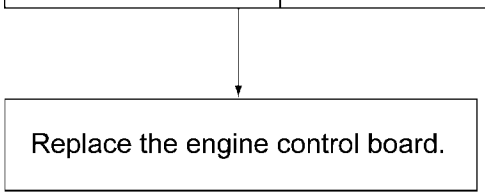
LCD Message	Possible Cause
Printer Error 46	Fuser Belt Rotation Error


Y
Is the fuser belt of the fuser unit normal ?
N
Y
Are the gears or Rotation Plate of fuser unit normal ?
N
Y
Replace the fuser unit.
Check the connection between engine control board (CN15) and fuser unit.
Is the cable connected correctly ?
N
Connect them correctly.
Y
Is the period of encoder pulse signal (pin 4; CN15) 1.4 sec or less ?
N
Replace the fuser unit.
Y
* Replace the engine control board.

* When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

13.5.11. Printer Error 47

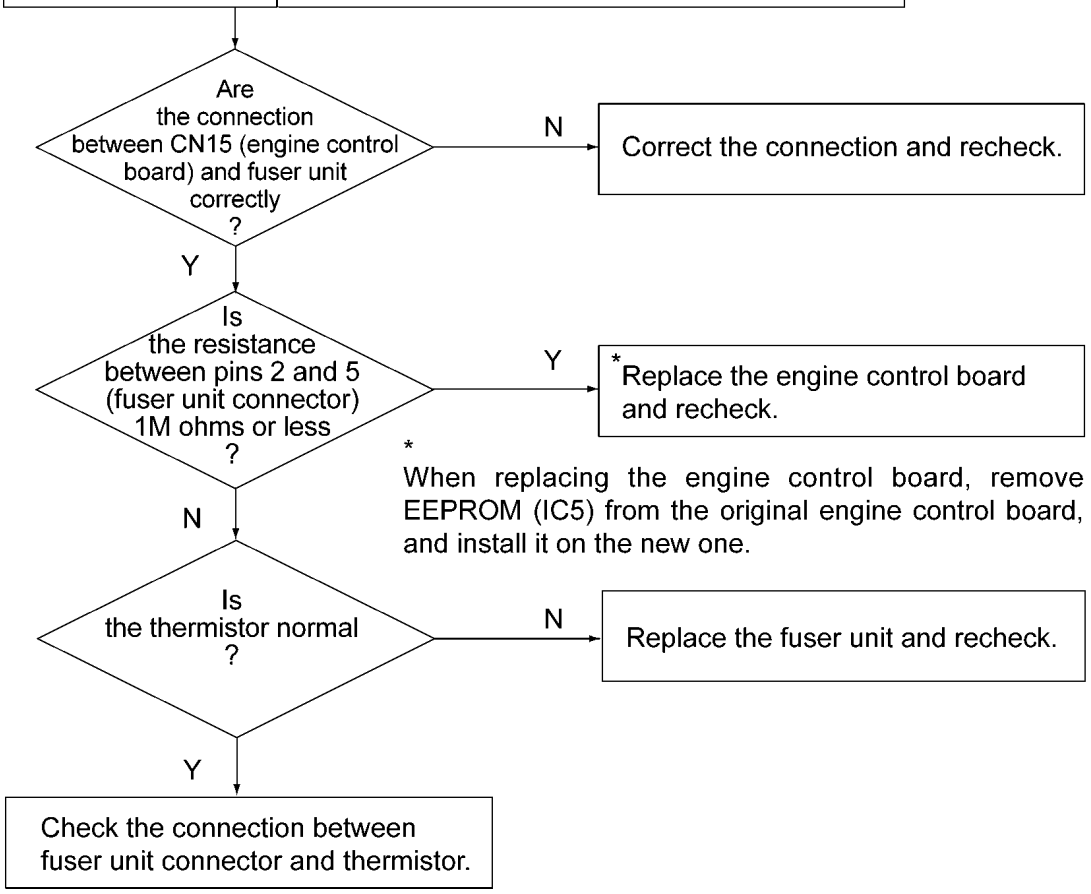
LCD Message	Possible Cause
Printer Error 47	Solenoid drive transistor short circuit



When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and it on the new one.

13.5.12. Printer Error 48

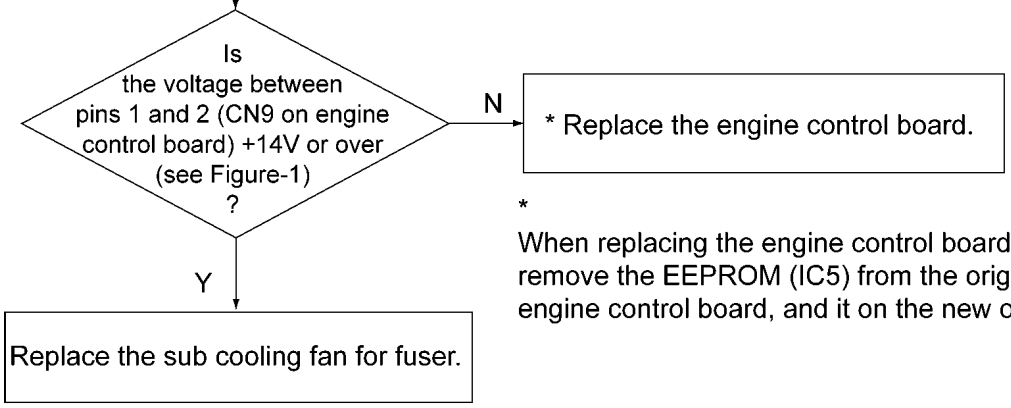
LCD Message	Possible Cause
Printer Error 48	Temperature (detected by thermistor 3) low error


Are the connection between CN15 (engine control board) and fuser unit correctly ?
N
Correct the connection and recheck.
Y
Is the resistance between pins 2 and 5 (fuser unit connector) 1M ohms or less ?
Y
*Replace the engine control board and recheck.
N
Is the thermistor normal ?
N
Replace the fuser unit and recheck.
Y
Check the connection between fuser unit connector and thermistor.

* When replacing the engine control board, remove EEPROM (IC5) from the original engine control board, and install it on the new one.

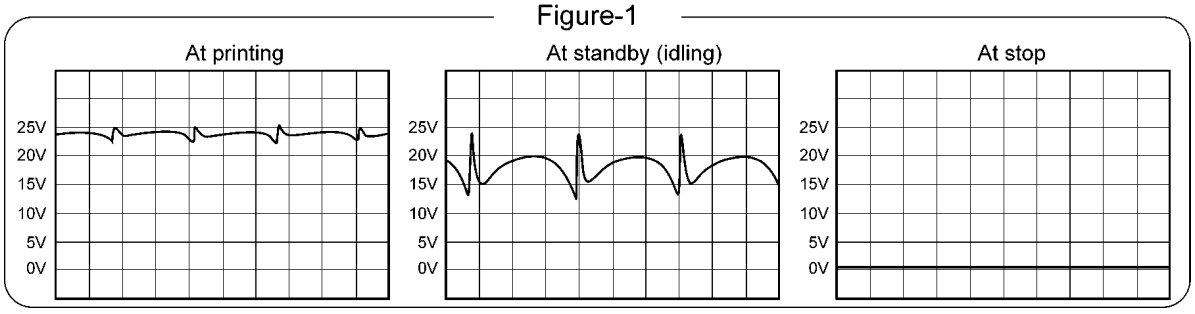
13.5.13. Printer Error 50

LCD Message	Possible Cause
Printer Error 50	Sub Cooling Fan for Fuser Error



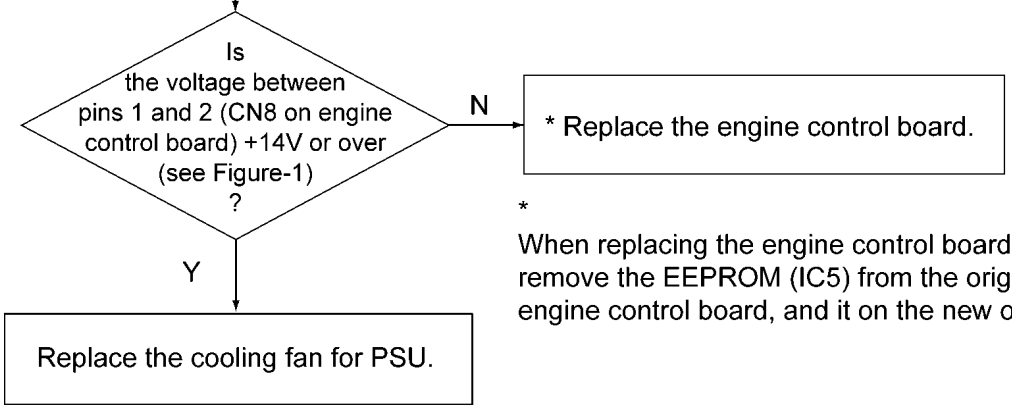
*
When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and it on the new one.

Figure-1



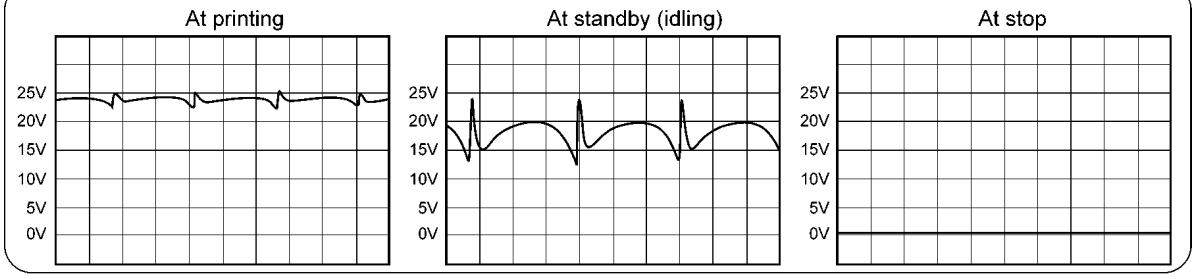
13.5.14. Printer Error 53

LCD Message	Possible Cause
Printer Error 53	Cooling Fan for PSU Error



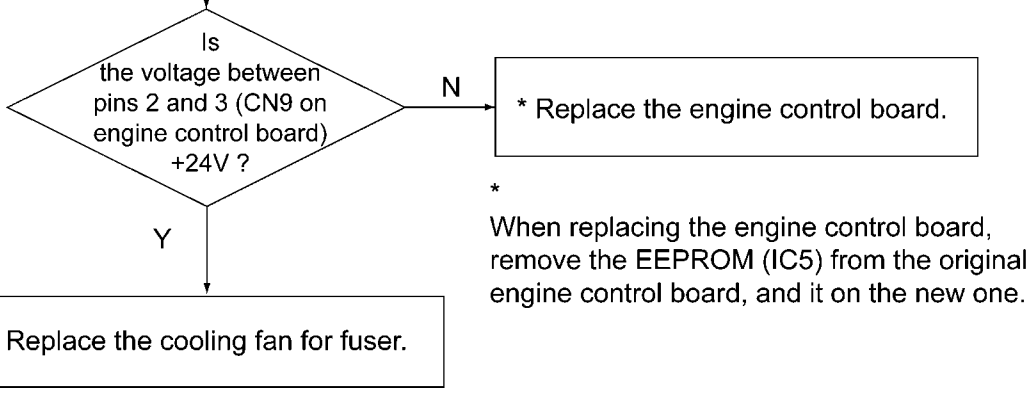
*
When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and it on the new one.

Figure-1



13.5.15. Printer Error 54

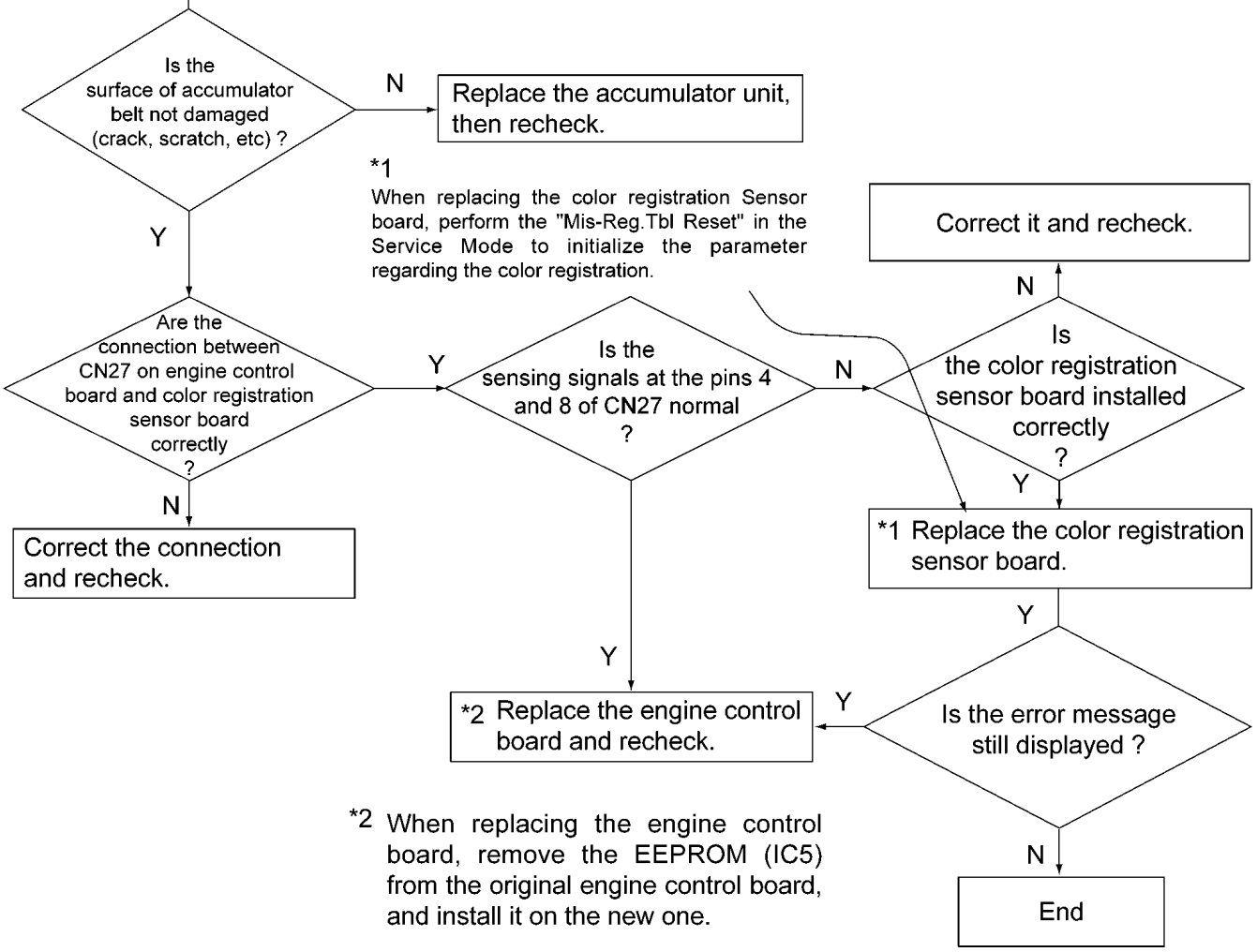
LCD Message	Possible Cause
Printer Error 54	Cooling Fan for Fuser Error


Is the voltage between pins 2 and 3 (CN9 on engine control board) +24V ?
N
* Replace the engine control board.
Y
Replace the cooling fan for fuser.

*
When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and it on the new one.

13.5.16. Printer Error 56

LCD Message	Possible Cause
Printer Error 56	Color Mis-registration Sensor Error.

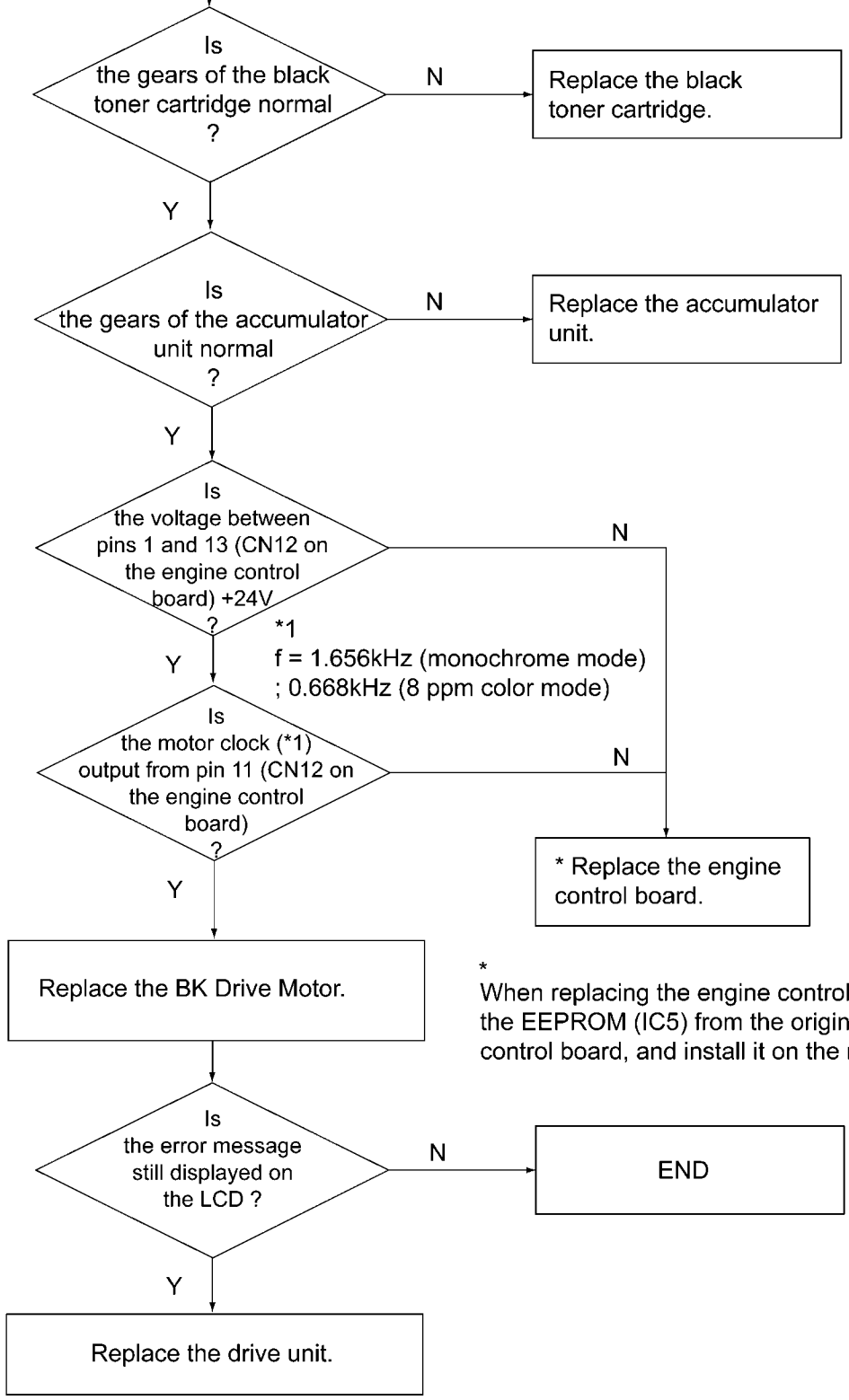

Is the surface of accumulator belt not damaged (crack, scratch, etc) ?
N
Replace the accumulator unit, then recheck.
Y
Are the connection between CN27 on engine control board and color registration sensor board correctly ?
Y
Is the sensing signals at the pins 4 and 8 of CN27 normal ?
N
Is the color registration sensor board installed correctly ?
N
Correct it and recheck.
Y
*1 Replace the color registration sensor board.
N
Correct the connection and recheck.
Y
*2 Replace the engine control board and recheck.
Y
Is the error message still displayed ?
Y
N
End

*1 When replacing the color registration Sensor board, perform the "Mis-Reg.Tbl Reset" in the Service Mode to initialize the parameter regarding the color registration.

*2 When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

13.5.17. Printer Error 65

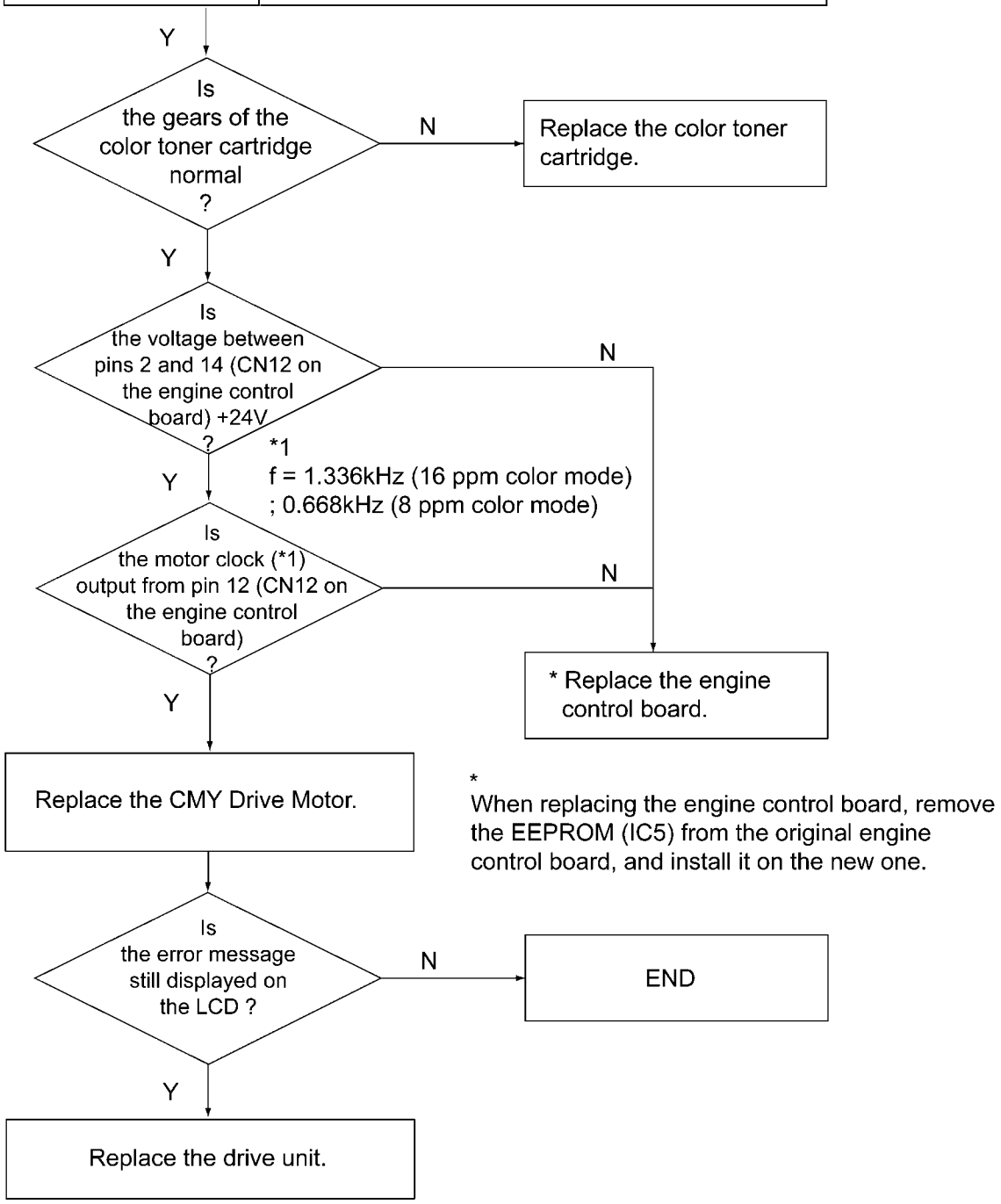
LCD Message	Possible Cause
Printer Error 65	BK Drive Motor unlocked


Is the gears of the black toner cartridge normal ?
N
Replace the black toner cartridge.
Y
Is the gears of the accumulator unit normal ?
N
Replace the accumulator unit.
Y
Is the voltage between pins 1 and 13 (CN12 on the engine control board) +24V ?
N
*1
f = 1.656kHz (monochrome mode)
; 0.668kHz (8 ppm color mode)
Y
Is the motor clock (*1) output from pin 11 (CN12 on the engine control board) ?
N
* Replace the engine control board.
Y
Replace the BK Drive Motor.
Is the error message still displayed on the LCD ?
N
END
Y
Replace the drive unit.

* When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

13.5.18. Printer Error 66

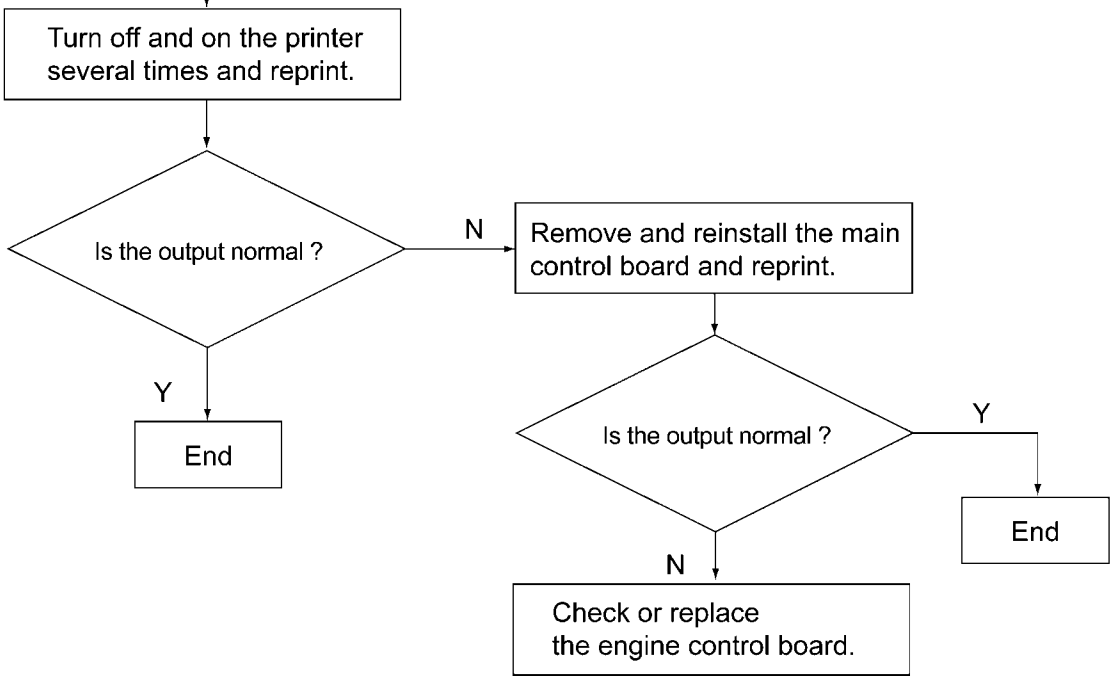
LCD Message	Possible Cause
Printer Error 66	CMY Drive Motor unlocked


Y
Is the gears of the color toner cartridge normal ?
N
Replace the color toner cartridge.
Y
Is the voltage between pins 2 and 14 (CN12 on the engine control board) +24V ?
N
*1
f = 1.336kHz (16 ppm color mode)
; 0.668kHz (8 ppm color mode)
Y
Is the motor clock (*1) output from pin 12 (CN12 on the engine control board) ?
N
* Replace the engine control board.
Y
Replace the CMY Drive Motor.
Is the error message still displayed on the LCD ?
N
END
Y
Replace the drive unit.

*
When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

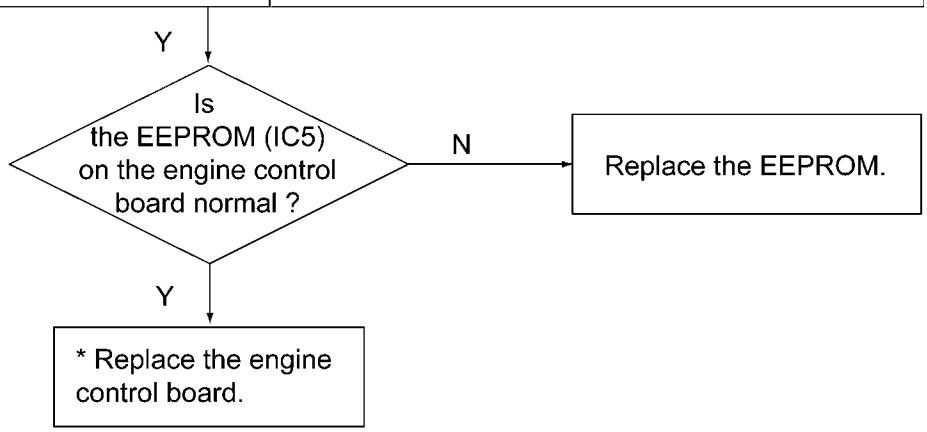
13.5.19. Printer Error 70

LCD Message	Possible Cause
Printer Error 70	Engine Flash ROM Data Error



13.5.20. Printer Error 72

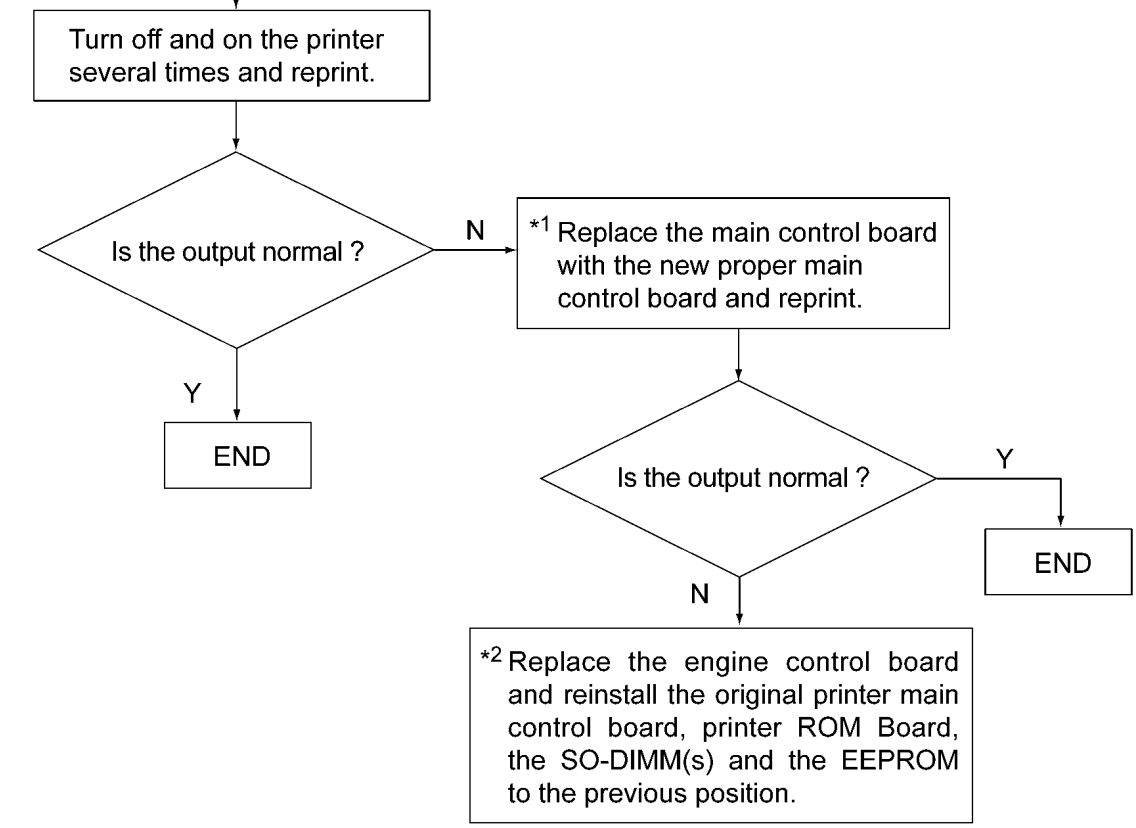
LCD Message	Possible Cause
Printer Error 72	EEPROM (ECU) Read/Write Error



*
When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

13.5.21. Printer Error 73

LCD Message	Possible Cause
Printer Error 73	Communication Error between main control and engine control boards

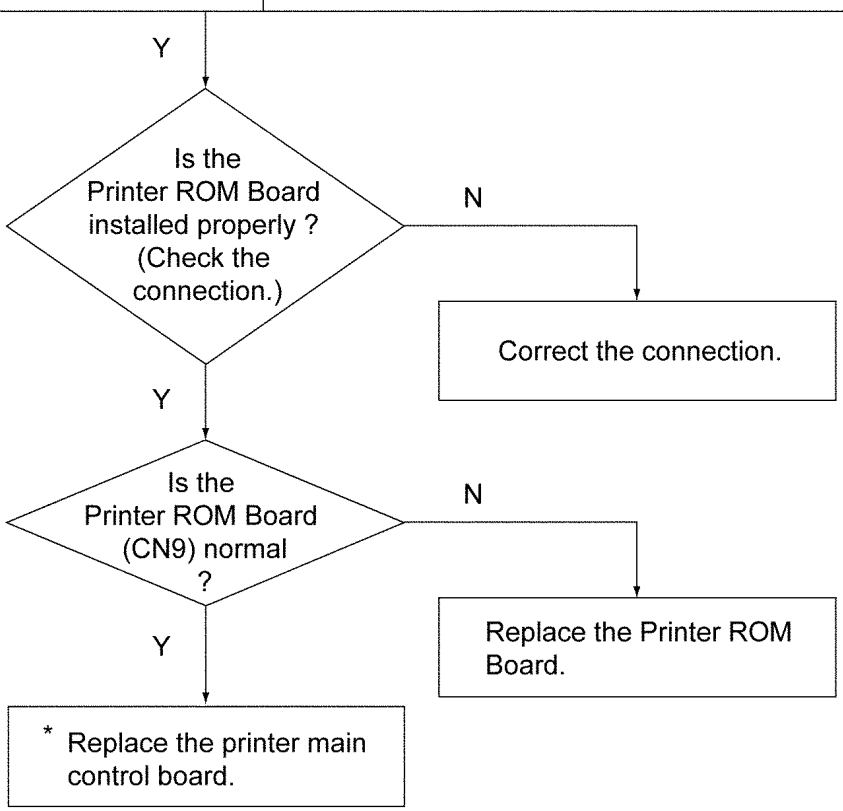

Turn off and on the printer several times and reprint.
Is the output normal ?
N
*1 Replace the main control board with the new proper main control board and reprint.
Y
END
Is the output normal ?
Y
END
N
*2 Replace the engine control board and reinstall the original printer main control board, printer ROM Board, the SO-DIMM(s) and the EEPROM to the previous position.

*1 When replacing the printer main control board, remove the Printer ROM Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

*2 When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

13.5.22. Printer Error 80

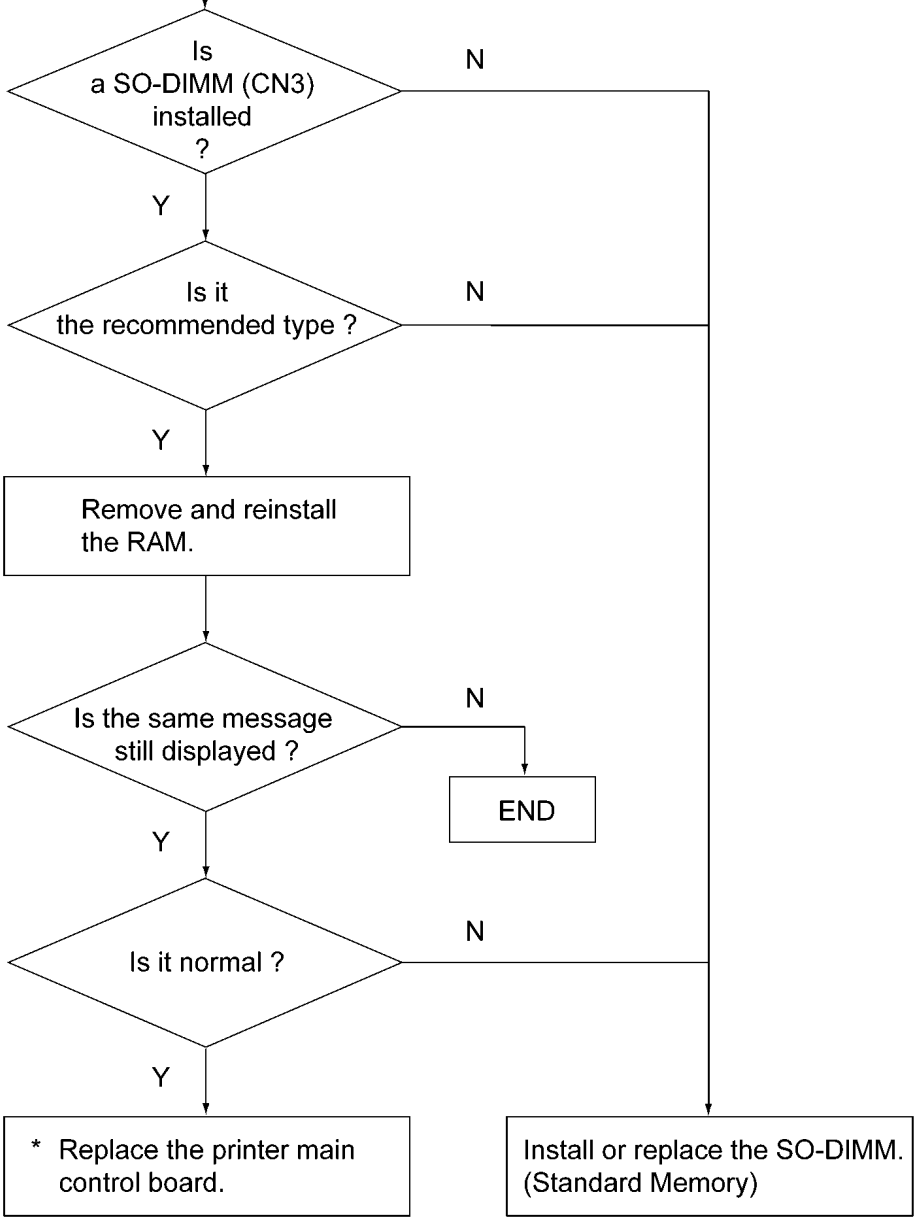
LCD Message	Possible Cause
Printer Error 80	Controller Program ROM checksum error



* When replacing the printer main control board, remove the Printer ROM Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

13.5.23. Printer Error 81

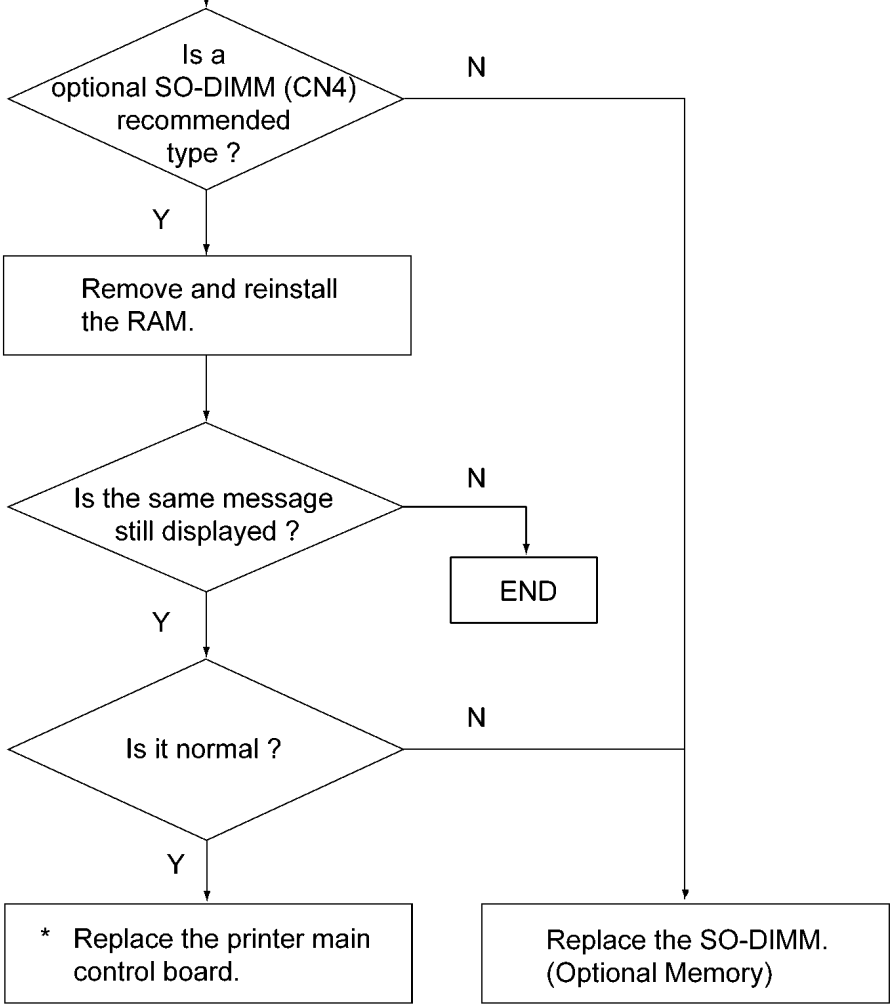
LCD Message	Possible Cause
Printer Error 81	Controller RAM (Standard Memory) type check error



*When replacing the printer main control board, remove the Printer ROM Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

13.5.24. Printer Error 82

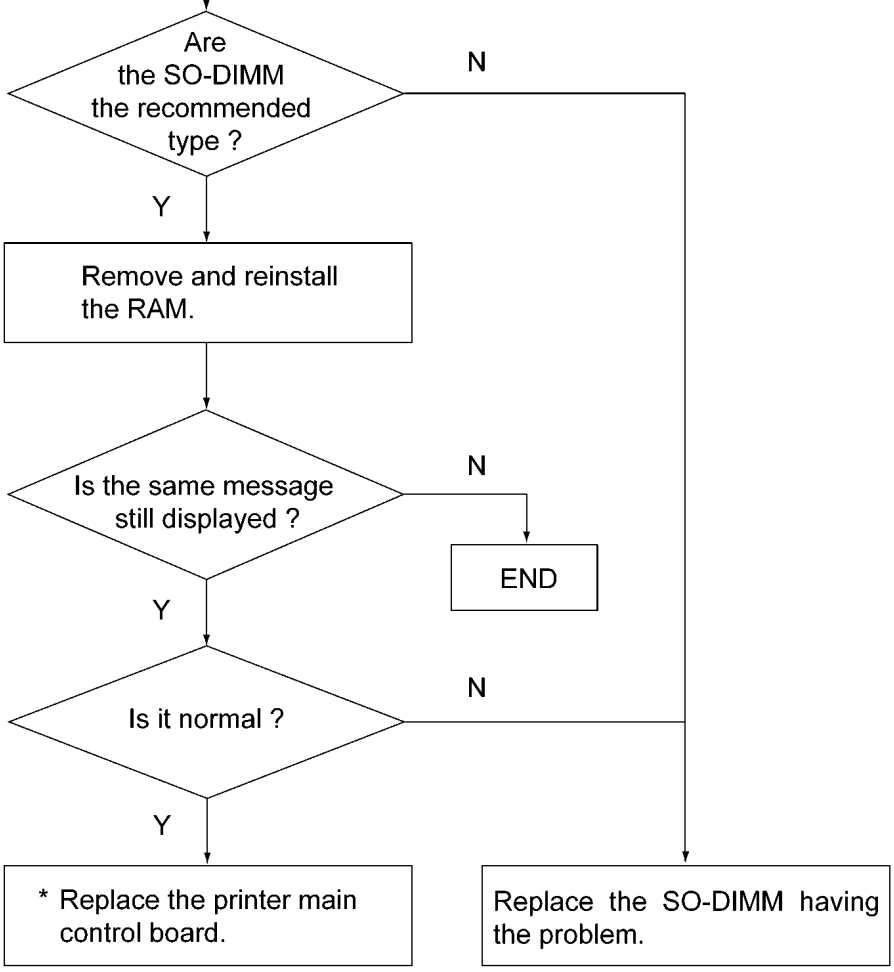
LCD Message	Possible Cause
Printer Error 82	Controller RAM (Optional memory) type check error



* When replacing the printer main control board, remove the Printer ROM Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

13.5.25. Printer Error 83

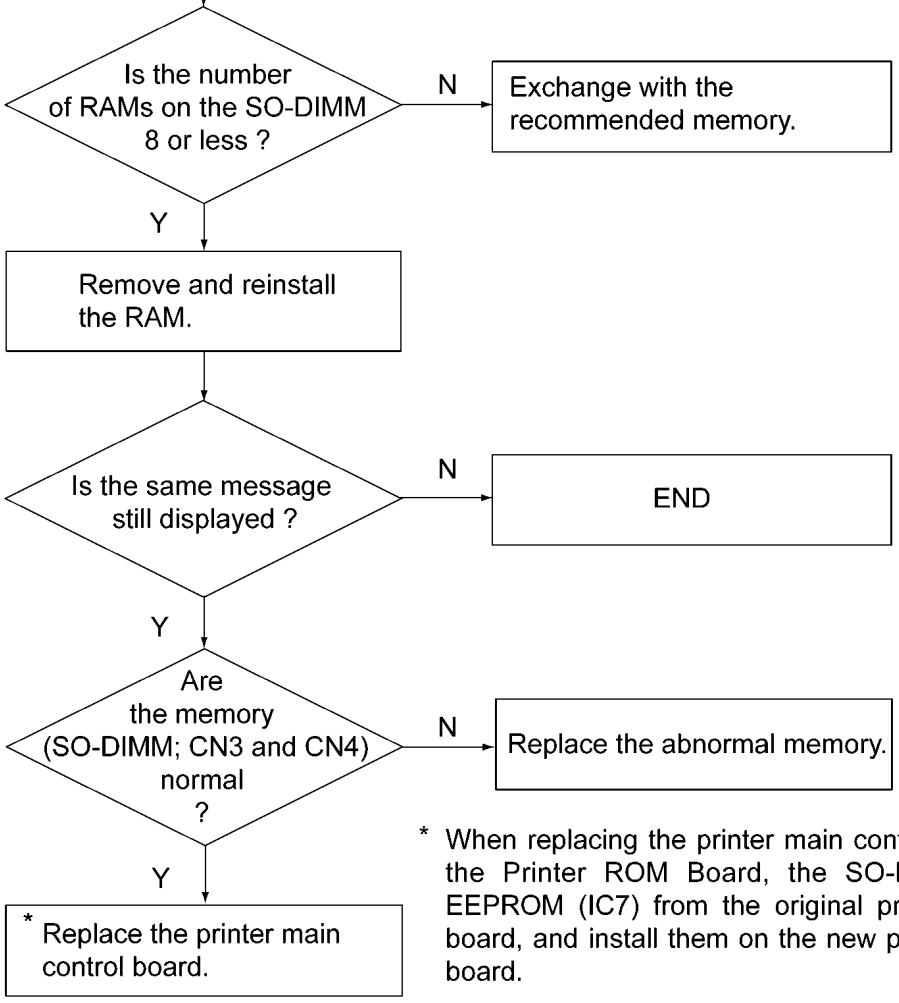
LCD Message	Possible Cause
Printer Error 83	Controller RAM Read/Write check error



* When replacing the printer main control board, remove the Printer ROM Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

13.5.26. Printer Error 84

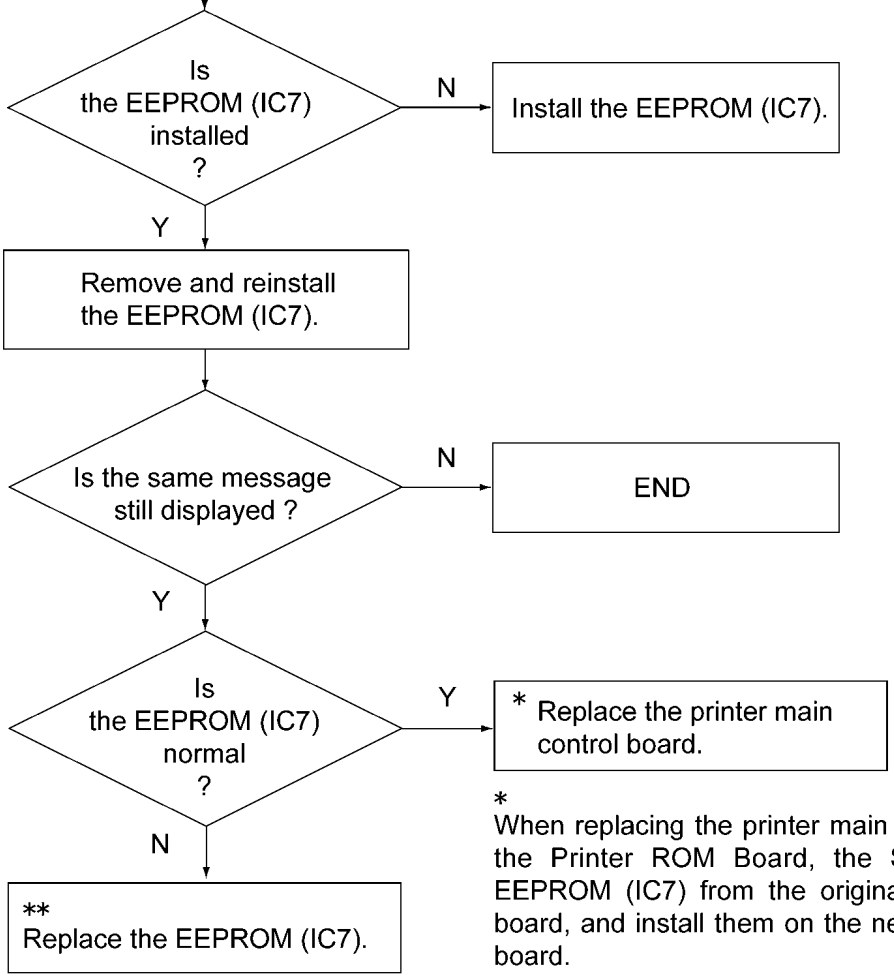
LCD Message	Possible Cause
Printer Error 84	Controller RAM total amount error


Is the number of RAMs on the SO-DIMM 8 or less ?
N
Exchange with the recommended memory.
Y
Remove and reinstall the RAM.
Is the same message still displayed ?
N
END
Y
Are the memory (SO-DIMM; CN3 and CN4) normal ?
N
Replace the abnormal memory.
Y
* Replace the printer main control board.

* When replacing the printer main control board, remove the Printer ROM Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

13.5.27. Printer Error 90

LCD Message	Possible Cause
Printer Error 90	Controller EEPROM check error



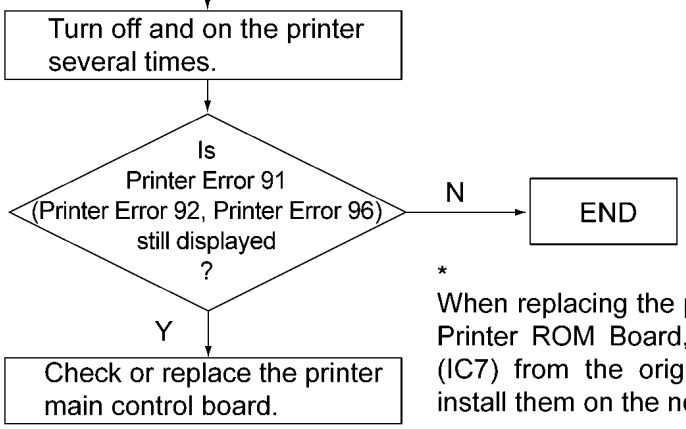
*
When replacing the printer main control board, remove the Printer ROM Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

**
When exchanging the EEPROM (IC7) with new one, the Language, Media Type, PCL Symbol Set and Custom Size Unit must be reset as shown below. All of the following default settings (Language, Media Type, Paper Size, etc.) are set by selecting desired country in "Country" menu of section 6.11 Controller Setting Item Menu.

<table>
<tr><th rowspan="2">Application Countries / Areas</th><th colspan="5">Default Setting</th></tr>
<tr><th>Language</th><th>Media Type</th><th>Paper Size</th><th>PCL Symbol Set</th><th>Custom Size Unit</th></tr>
<tr><td>U.S.A.</td><td rowspan="3">English</td><td rowspan="3">Plain Paper</td><td rowspan="2">Letter</td><td>PC-8</td><td rowspan="2">Inch</td></tr>
<tr><td>Canada</td><td>ISO Latin 1</td></tr>
<tr><td>United Kingdom, Australia, Germany, etc.</td><td>A4</td><td>ISO Latin 1</td><td>mm</td></tr>
</table>

13.5.28. Printer Error 91, Printer Error 92 and Printer Error 96

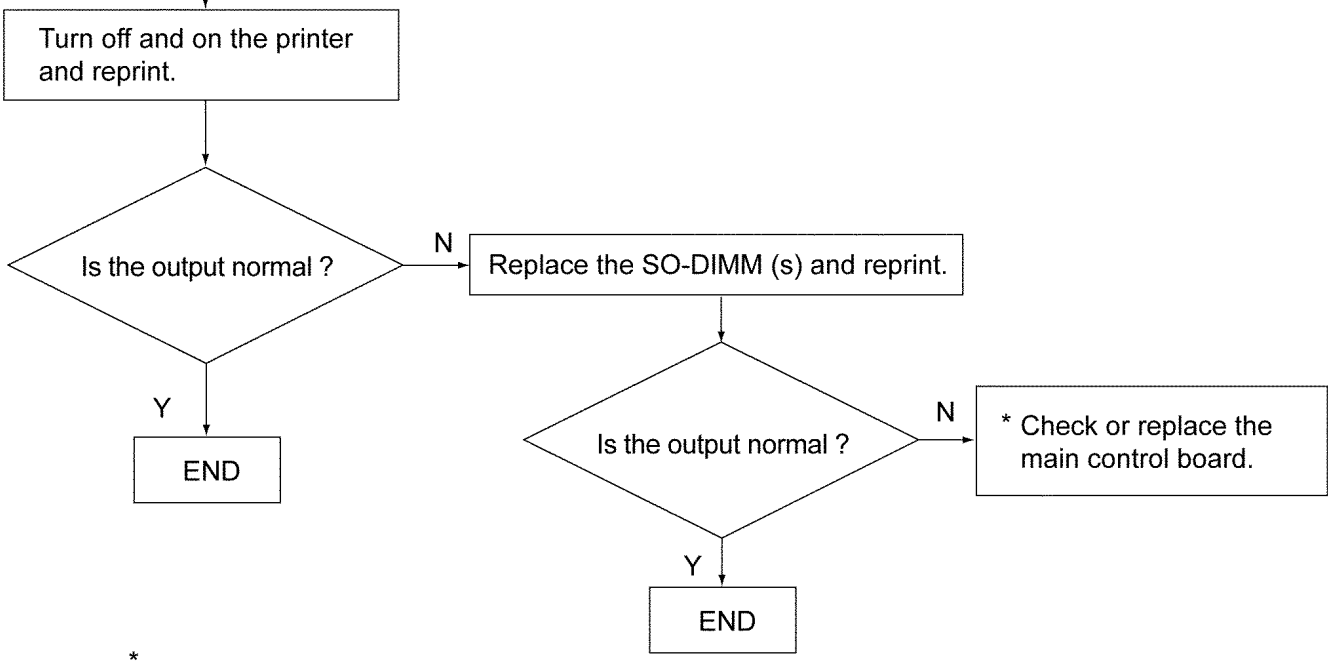
LCD Message	Possible Cause
Printer Error 91 Printer Error 92 Printer Error 96	ASIC 1 error ASIC 2 error Network Chip Error


Turn off and on the printer several times.
Is Printer Error 91 (Printer Error 92, Printer Error 96) still displayed ?
N
END
Y
Check or replace the printer main control board.

*
When replacing the printer main control board, remove the Printer ROM Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

13.5.29. Printer Error 93, 94

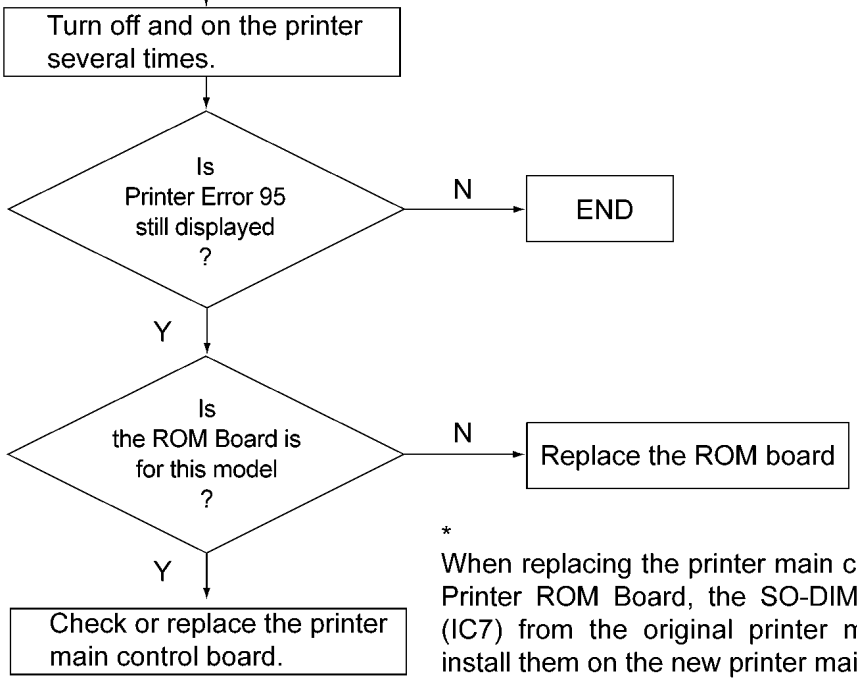
LCD Message	Possible Cause
Printer Error 93 Printer Error 94	CPU Error 1 CPU Error 2



*
When replacing the printer main control board, remove the Printer ROM Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

13.5.30. Printer Error 95

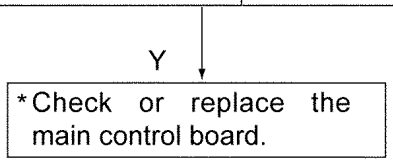
LCD Message	Possible Cause
Printer Error 95	CPU Error 3 (Configuration)


Turn off and on the printer several times.
Is Printer Error 95 still displayed ?
N
END
Y
Is the ROM Board is for this model ?
N
Replace the ROM board
Y
Check or replace the printer main control board.

*
When replacing the printer main control board, remove the Printer ROM Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

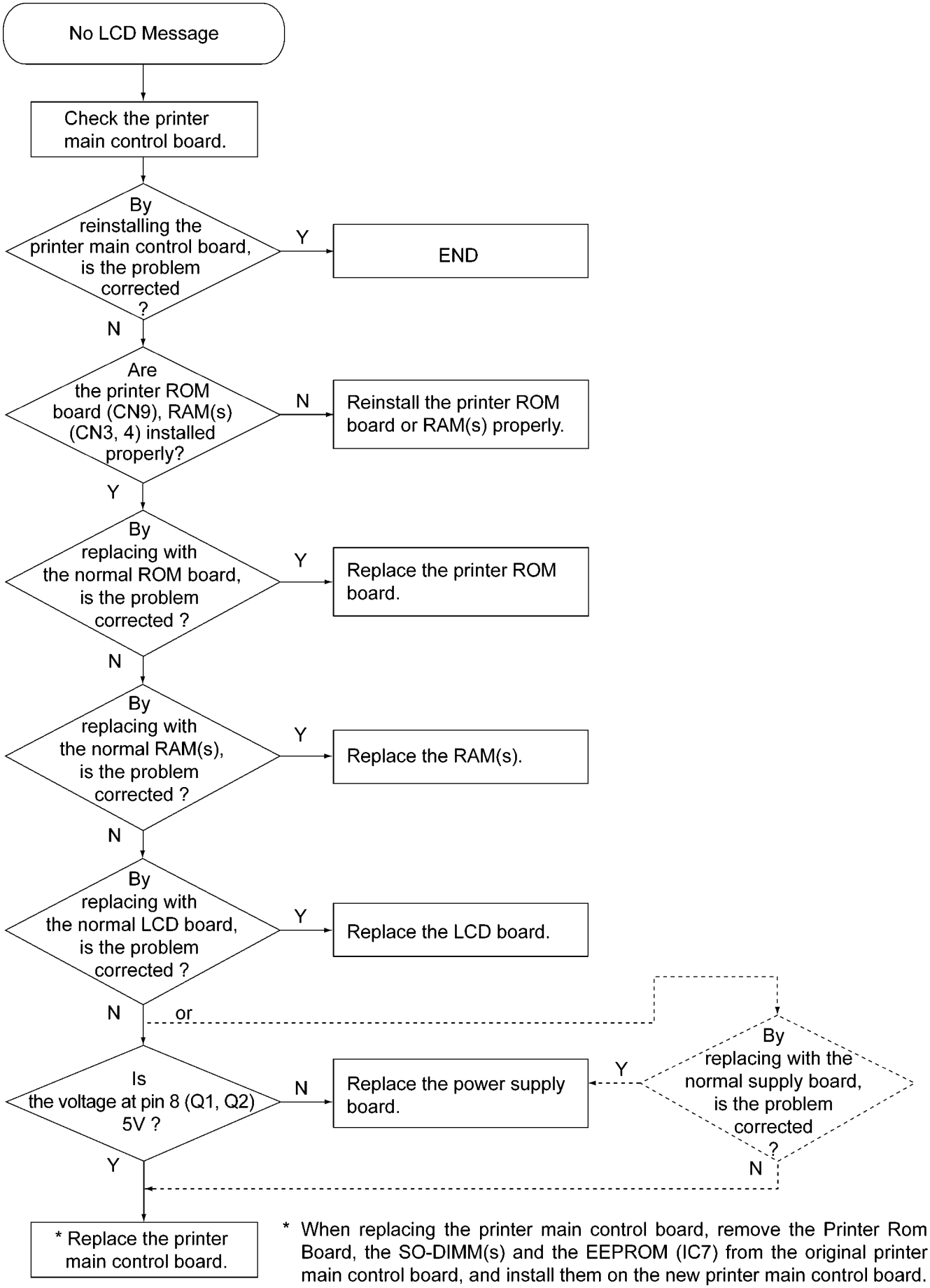
13.5.31. Printer Error 98

LCD Message	Possible Cause
Printer Error 98	CPU High Temperature Error



* When replacing the printer main control board, remove the Printer Rom Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

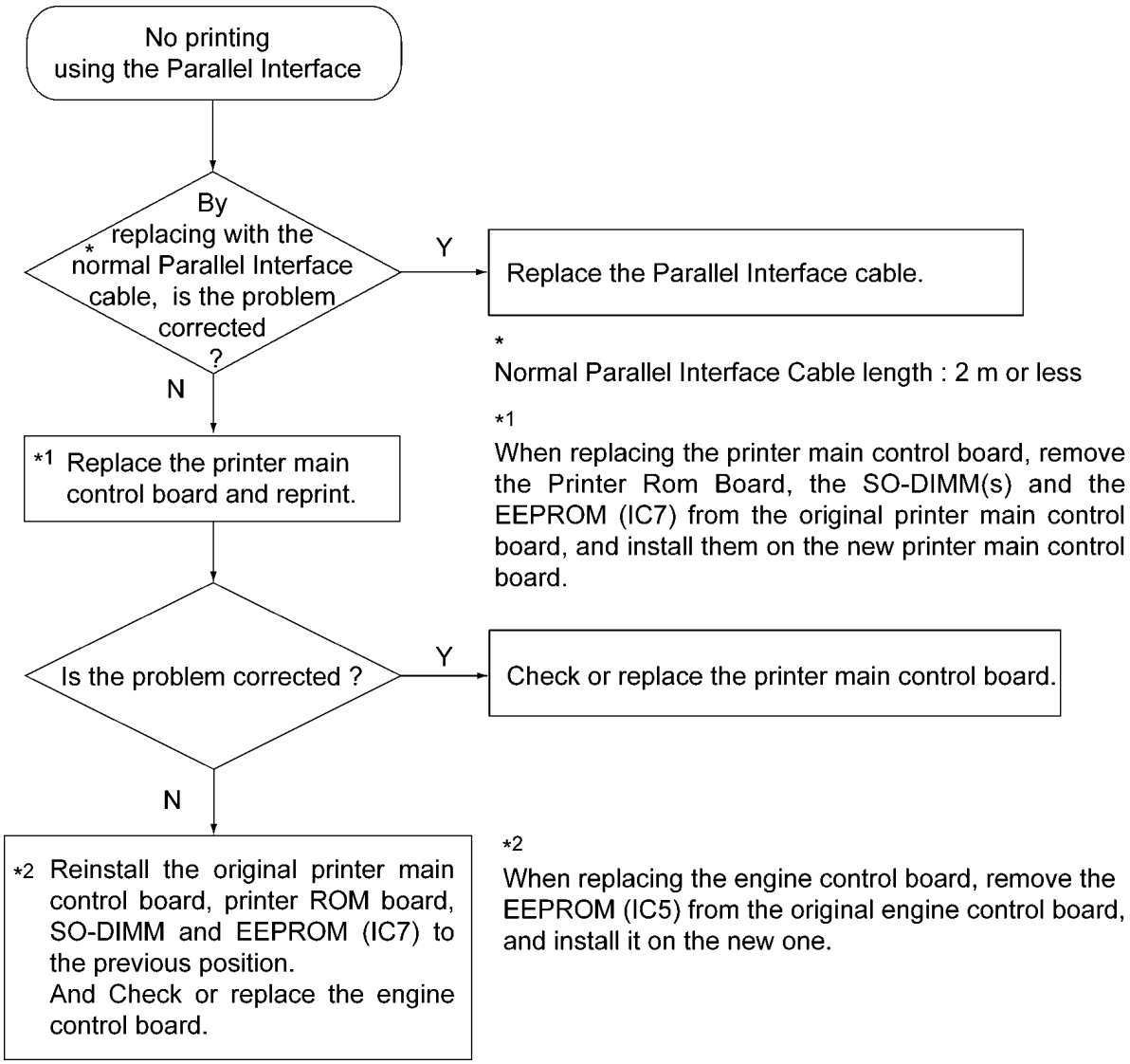
13.6. No Message


No LCD Message
Check the printer main control board.
By reinstalling the printer main control board, is the problem corrected ?
Y
END
N
Are the printer ROM board (CN9), RAM(s) (CN3, 4) installed properly?
N
Reinstall the printer ROM board or RAM(s) properly.
Y
By replacing with the normal ROM board, is the problem corrected ?
Y
Replace the printer ROM board.
N
By replacing with the normal RAM(s), is the problem corrected ?
Y
Replace the RAM(s).
N
By replacing with the normal LCD board, is the problem corrected ?
Y
Replace the LCD board.
N
or
Is the voltage at pin 8 (Q1, Q2) 5V ?
N
Replace the power supply board.
Y
By replacing with the normal supply board, is the problem corrected ?
N
Y
* Replace the printer main control board.

* When replacing the printer main control board, remove the Printer Rom Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

13.7. No Printing

13.7.1. Using Parallel Interface Cable

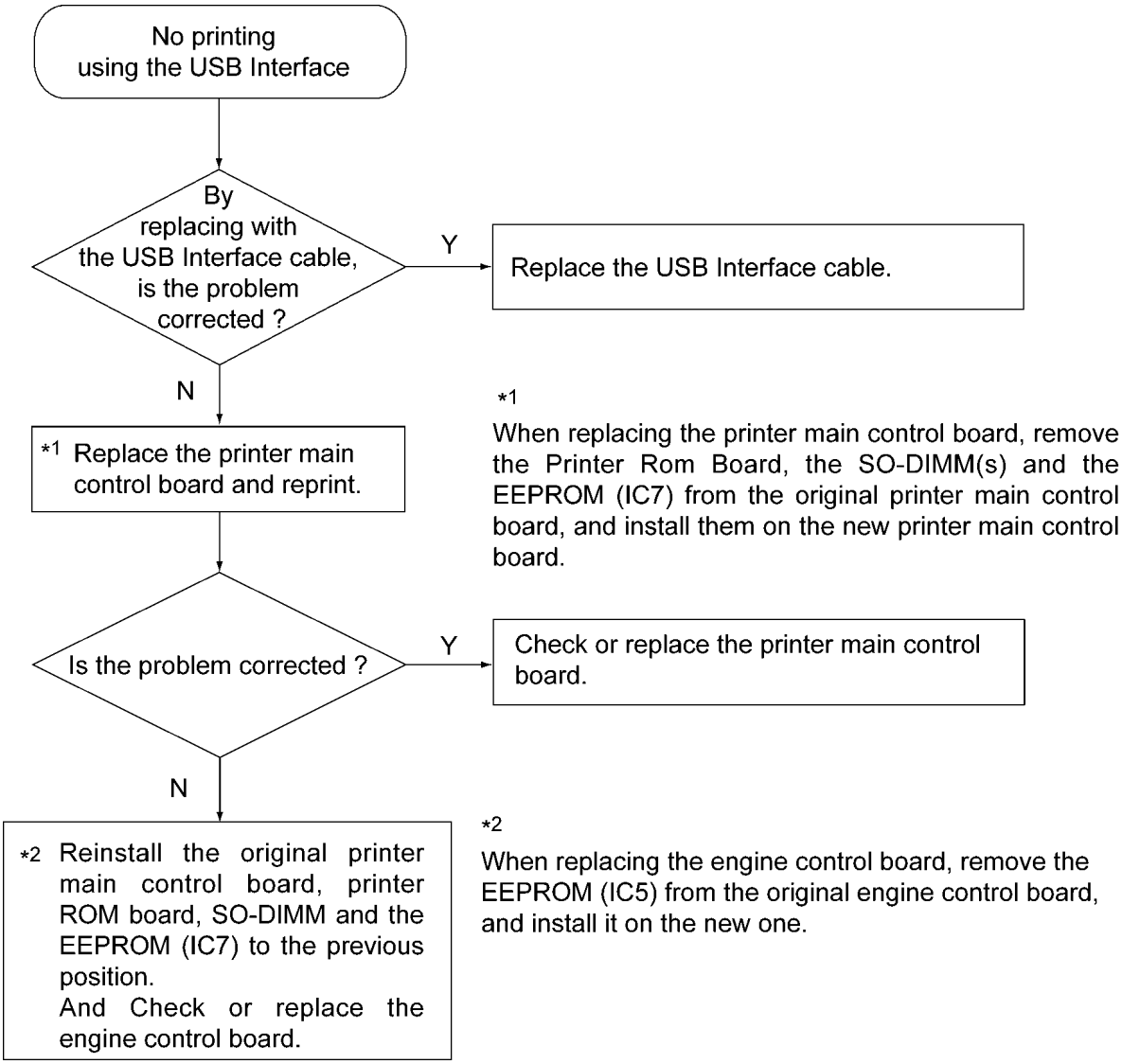


*
Normal Parallel Interface Cable length : 2 m or less

*1
When replacing the printer main control board, remove the Printer Rom Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

*2
When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

13.7.2. Using USB Interface Cable


No printing using the USB Interface
By replacing with the USB Interface cable, is the problem corrected ?
Y
Replace the USB Interface cable.
N
*1 Replace the printer main control board and reprint.
Is the problem corrected ?
Y
Check or replace the printer main control board.
N
*2 Reinstall the original printer main control board, printer ROM board, SO-DIMM and the EEPROM (IC7) to the previous position.
And Check or replace the engine control board.

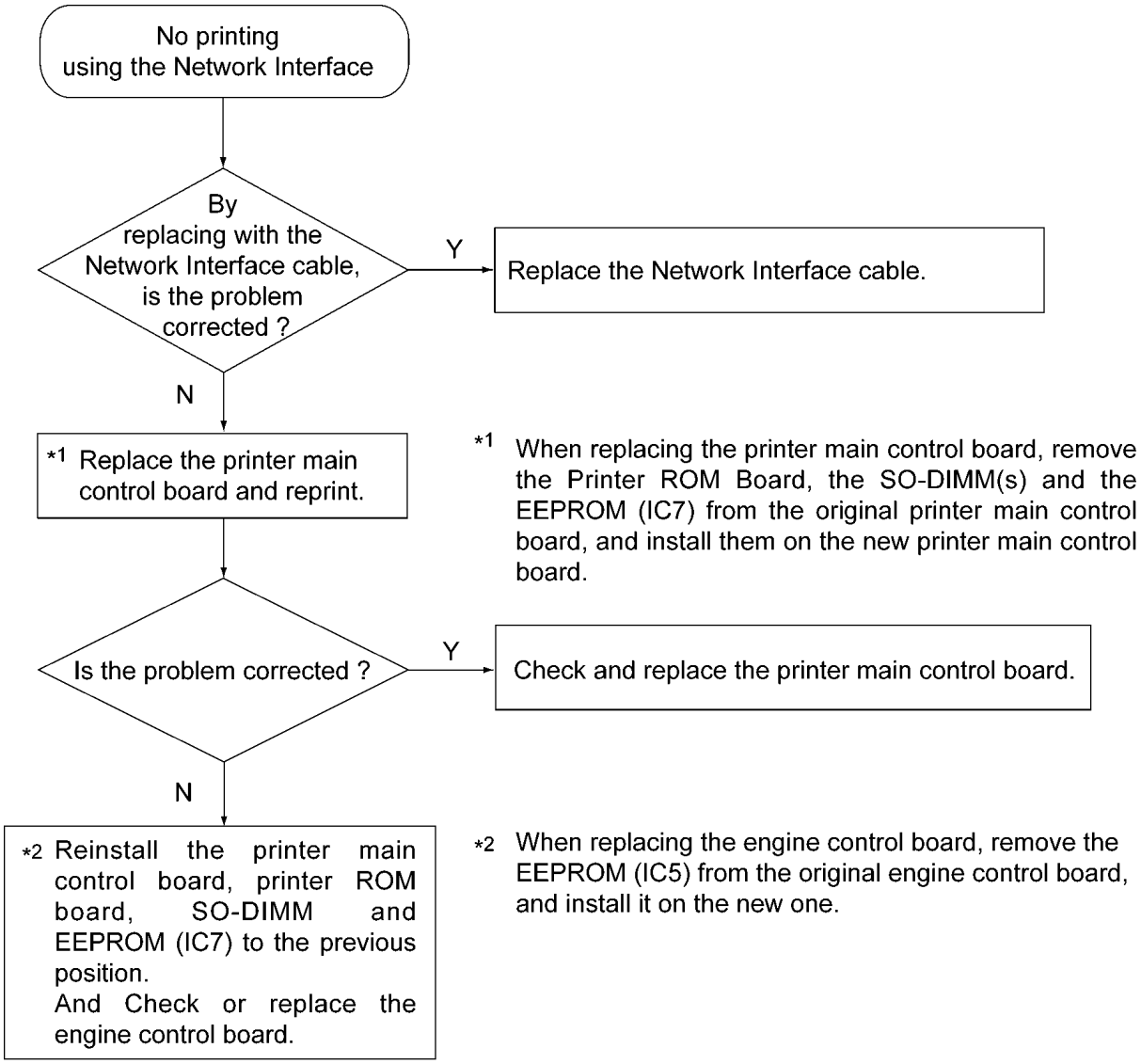
*1

When replacing the printer main control board, remove the Printer Rom Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

*2

When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

13.7.3. Using Network Interface


No printing using the Network Interface
By replacing with the Network Interface cable, is the problem corrected ?
Y
Replace the Network Interface cable.
N
*1 Replace the printer main control board and reprint.
Is the problem corrected ?
Y
Check and replace the printer main control board.
N
*2 Reinstall the printer main control board, printer ROM board, SO-DIMM and EEPROM (IC7) to the previous position.
And Check or replace the engine control board.

*1 When replacing the printer main control board, remove the Printer ROM Board, the SO-DIMM(s) and the EEPROM (IC7) from the original printer main control board, and install them on the new printer main control board.

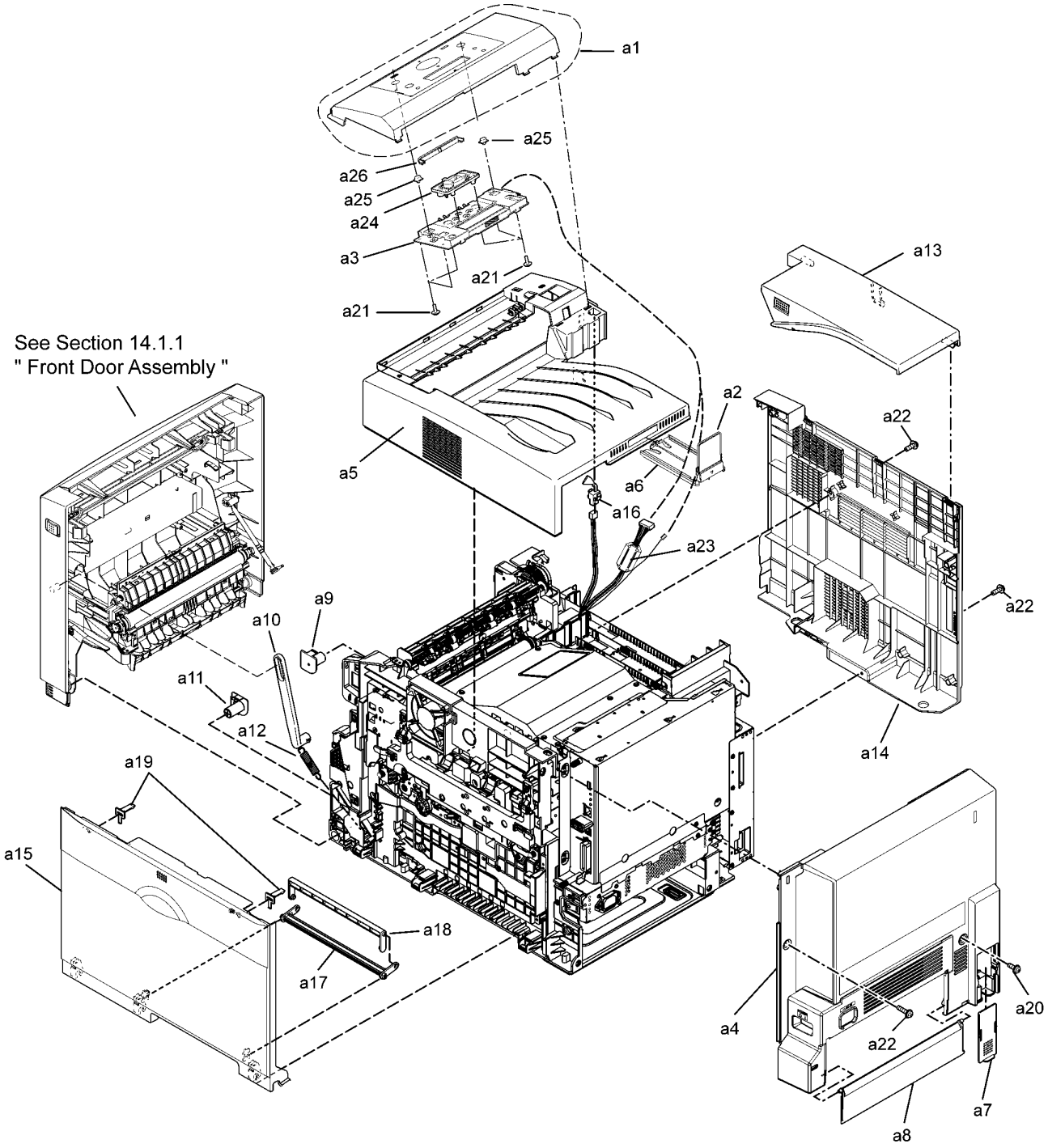
*2 When replacing the engine control board, remove the EEPROM (IC5) from the original engine control board, and install it on the new one.

14 Replacement Parts List with Lubrication Guide

Notes:

1. Important safety notice.
   Components identified by ⚠ have special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.
2. The S mark is for service standard parts and may differ from production parts.
3. The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

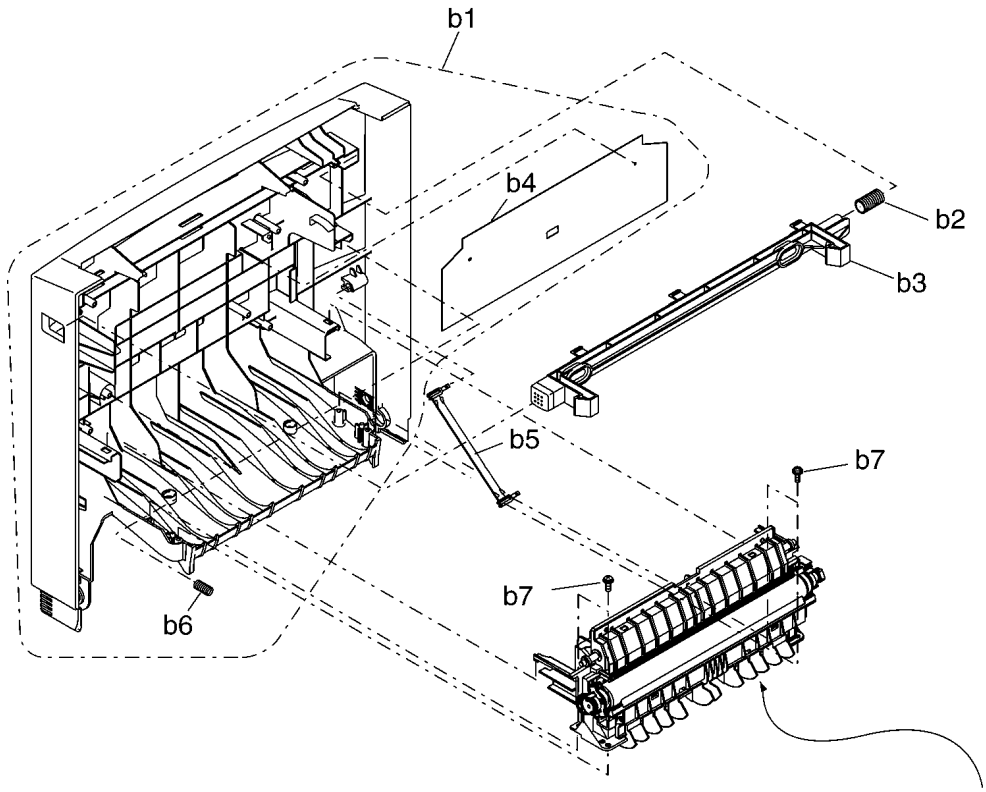
14.1. Covers



Ref. No.	Part No.	Part Name & Description
a1	PJYP00HP0M	LCD Panel Cover Assembly

Ref. No.	Part No.	Part Name & Description
a2	PJHRB0479Z-1	Paper Stopper
a3	PJWP00HPDM	LCD Board Complete
a4	PJYK00HP0M	Rear Cover Assembly
a5	PJYF00HP0M	Top Cover Assembly
a6	PJHRB0478Z-1	Paper Stopper Base
a7	PJKEB0053Y-1	2nd Cassette Feeder Cable Cover
a8	PJKEB0056Y-1	Cassette Cover
a9	PJHRB0211Z-1	Left Front Door Axis
a10	PJHRB0356Z-1	Front Support Lever
a11	PJHRB0209Z-1	Right Front Door Axis
a12	PJDSB0122Z	Lever Spring
a13	PJYK00HP2M	Toner Cartridge Access Cover Assembly
a14	PJKEC0017Y-1	Left Cover
a15	PJYK00HP1M	Right Cover Assembly
a16	K0L1BH000001	Access Cover Detection Switch
a17	PJHRB0177Z	Cartridge Lever B
a18	PJHRB0176Z	Cartridge Lever A
a19	PJHRB0205Z	Right Cover Hook
a20	XTB3+8FFN	Screw 3 x 8 mm
a21	XTW3+10SFJ	Screw 3 x 10 mm
a22	XTB3+12JFN	Screw 3 x 12 mm
a23	J0KG00000055	Ferrite Core with Case
a24	PJBCC0019Z	Operation Key
a25	PJBCC0020Z	Switch Button
a26	PJGPC0006Z	LED Lens

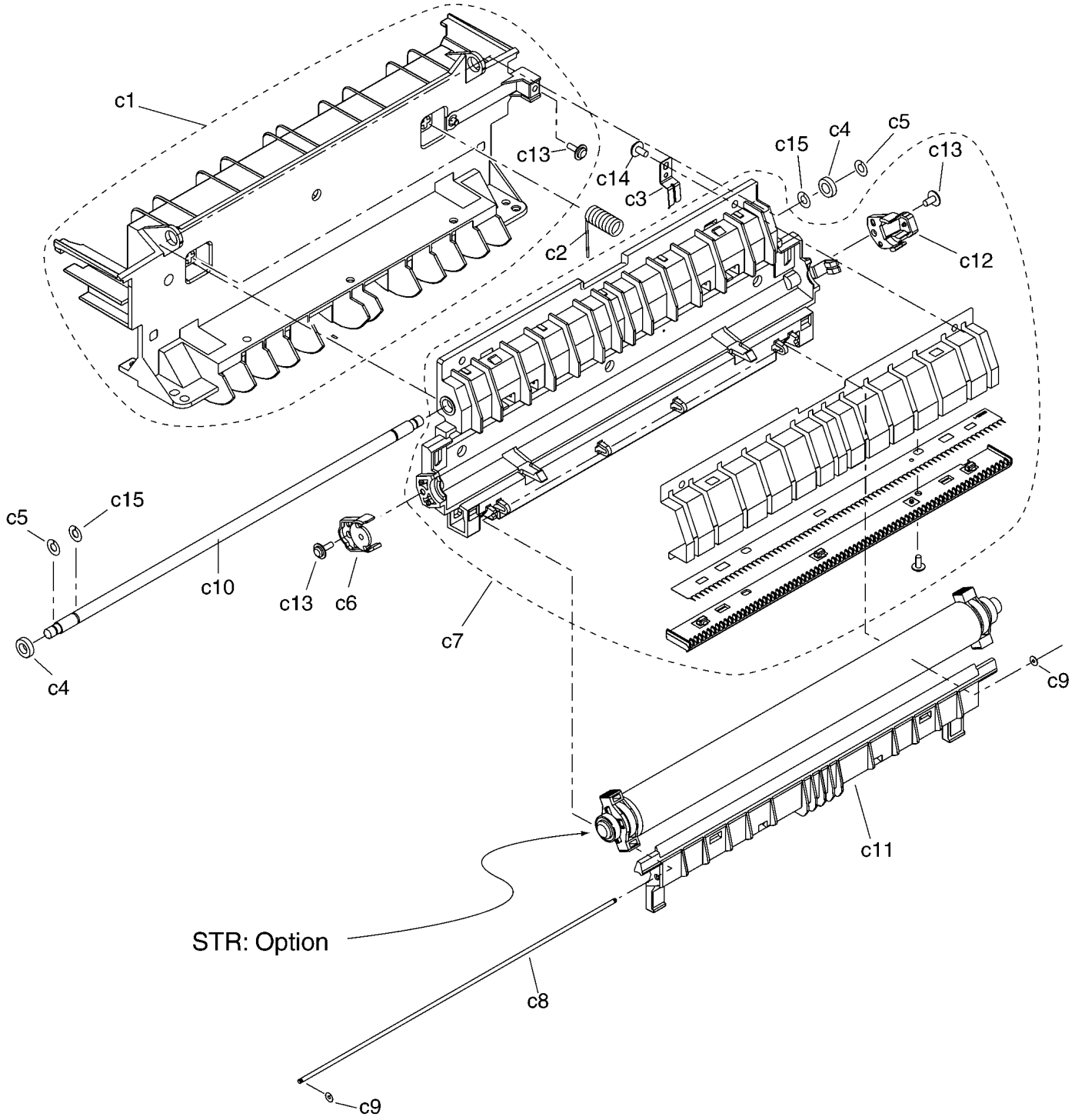
14.1.1. Front Door Assembly



See Section 14.1.2 "STR Unit"

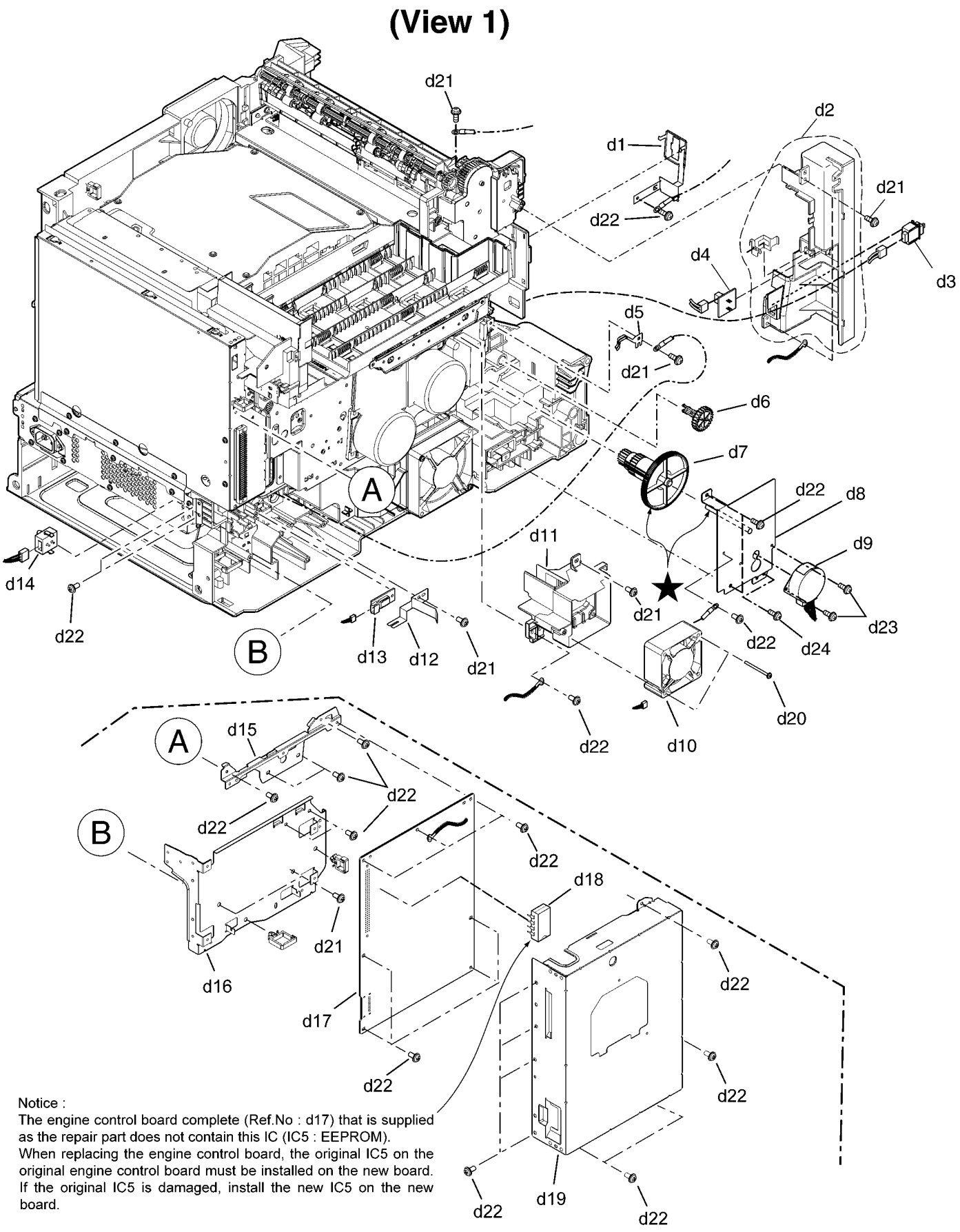
Ref. No.	Part No.	Part Name & Description
b1	PJYE00HP0M	Front Door Assembly
b2	PJDSB0144Z	Lock Lever Spring
b3	PJHRB0210Y-1	Front Door Lock Lever
b4	PJQTC0102Z	Jam Label
b5	PJHRB0207Z	Plastic Belt
b6	PJDSB0156Z	Spring
b7	XTW3+12SFJ	Screw 3 x 12 mm

14.1.2. STR Unit



Ref. No.	Part No.	Part Name & Description
c1	PJZE00HP0M	STR Frame Base Assembly
c2	PJBVC0074Z	STR Spring
c3	PJBUC0031Z	Terminal Plate
c4	PJHRC0163Z	STR Bushing
c5	PJNWC0003Z	Plastic Washer
c6	PJHRC0157Z	STR Roller Holder (L)
c7	PJZE00HP1M	STR Holder Assembly
c8	PJDFC0111Z	STR Cover Shaft
c9	PJNWC0004Z	Plastic Washer
c10	PJDFC0104Z	STR Hinge Shaft
c11	PJZE00HP2M	STR Cover Assembly
c12	PJHRC0158Y	STR Roller Holder (R)
c13	XTW3+8SFJ7	Screw 3 x 8 mm
c14	XTW3+6LFJ7	Screw 3 x 6 mm
c15	PJNW525Z	Plastic Washer

14.2. Left Side Parts

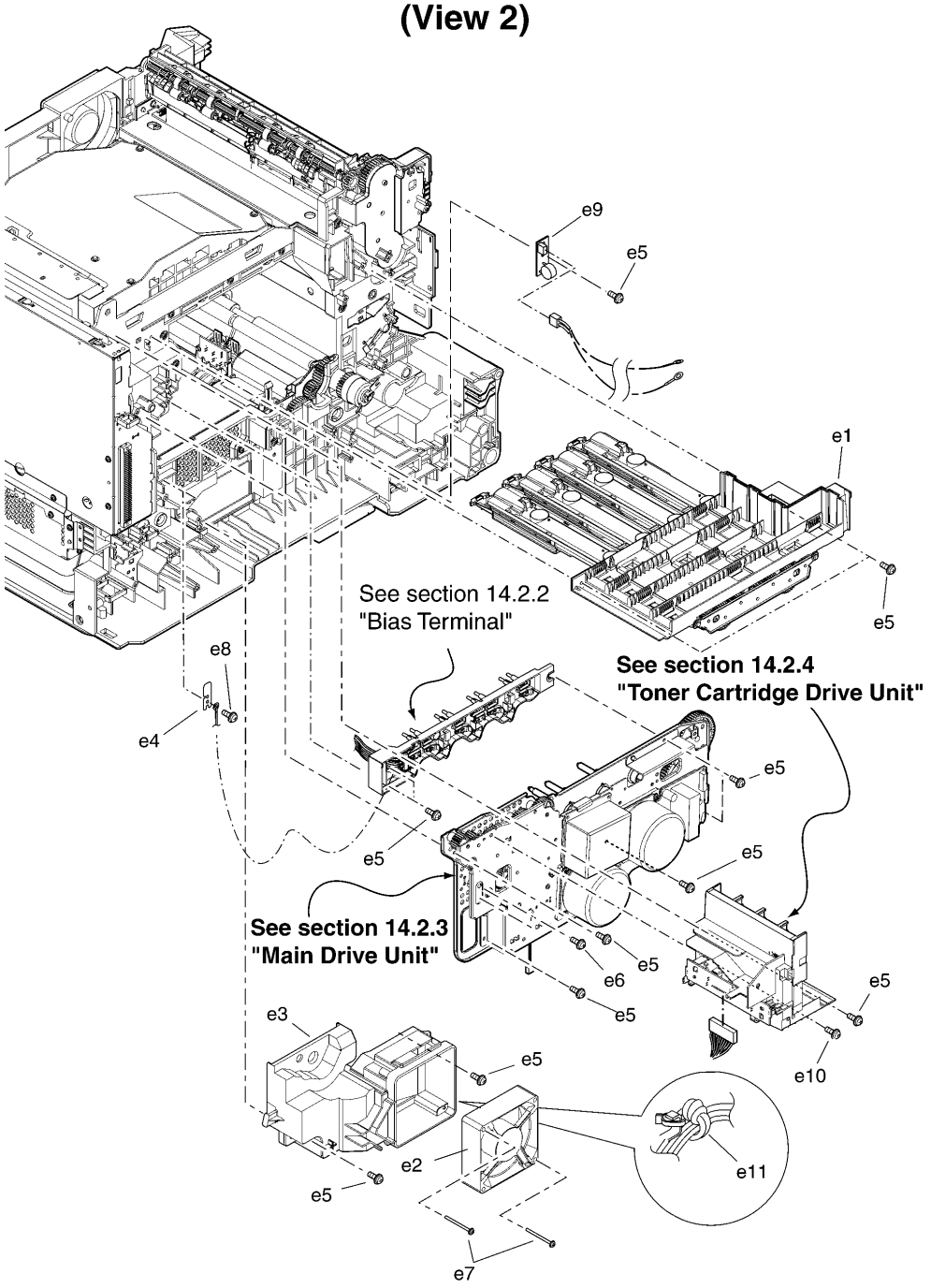


Notice :
The engine control board complete (Ref.No : d17) that is supplied as the repair part does not contain this IC (IC5 : EEPROM).
When replacing the engine control board, the original IC5 on the original engine control board must be installed on the new board.
If the original IC5 is damaged, install the new IC5 on the new board.

Ref. No.	Part No.	Part Name & Description
d1	PJMDC0019Z	Fuser Earth Plate
d2	PJZE00HPLM	Inner Cover Assembly

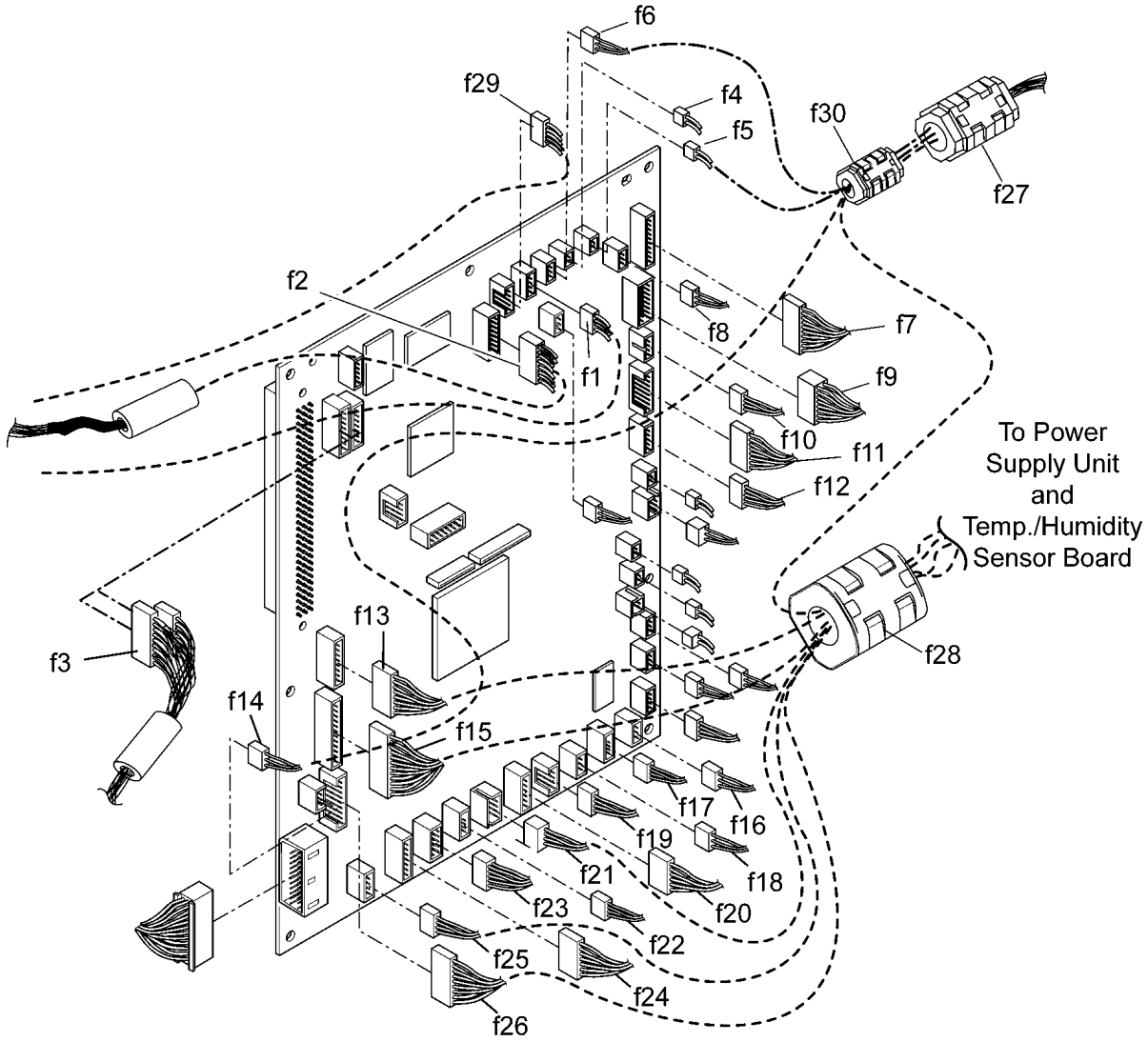
Ref. No.	Part No.	Part Name & Description
d3	K0F111E00096	ADU Detection Sensor
d4	PJWP00HP3M	ADU Jam Detection Sensor Board
d5	PJMDB0100Z	STR HV Plate
d6	PJDGB0135Z	Duplex Unit Drive Gear
d7	PJDGB0132Z	Paper Pickup Drive Gear
d8	PJZH00HP1M	Paper Pickup Motor Bracket
d9	42S1S15D6NE	Paper Pickup Motor
d10	FBE06A24HS	IH Fan Motor
d11	PJHRC0046Z	IH Fan Duct
d12	PJUSB0095Z	Earth Plate
d13	L2ZZ00000035	Temp./Humidity Sensor
d14	K0L3BH000001	Paper Size Detector
d15	PJMDB0125Y	Engine Board Small Bracket
d16	PJMCB0050Y	Engine Board Large Bracket
d17	PJWP00HP0M	Engine Control Board
d18	PJWV00HP0M	EEPROM (IC5; Engine Control Board)
d19	PJMCC0022Z	Engine Control Board Shield Cover
d20	XTW3+35SFJ7	Screw 3 X 35 mm
d21	XTW3+12SFJ7	Screw 3 X 12 mm
d22	XTW3+6LFJ7	Screw 3 X 6 mm
d23	XYN3+F6FJ	Screw 3 X 6 mm
d24	XTW3+10SFJ7	Screw 3 X 7 mm

(View 2)



Ref. No.	Part No.	Part Name & Description
e1	PJZV00HP0M	Toner Cartridge Holder Assembly
e2	FBE08A24HS	Power Supply Fan Motor
e3	PJHRC0045Z	Power Supply Fan Duct
e4	PJBUC0019Z	FHV Plate
e5	XTW3+12SFJ7	Screw 3 x 12 mm
e6	XTW3+6LFJ7	Screw 3 x 6 mm
e7	XTW3+35SFJ7	Screw 3 x 35 mm
e8	XTW3+10SFJ7	Screw 3 x 10 mm
e9	PJWP00HPEM	Exit FG Board
e10	XTW3+8LFJ7	Screw 3 x 8 mm
e11	PJJN18Z	Ferrite Core

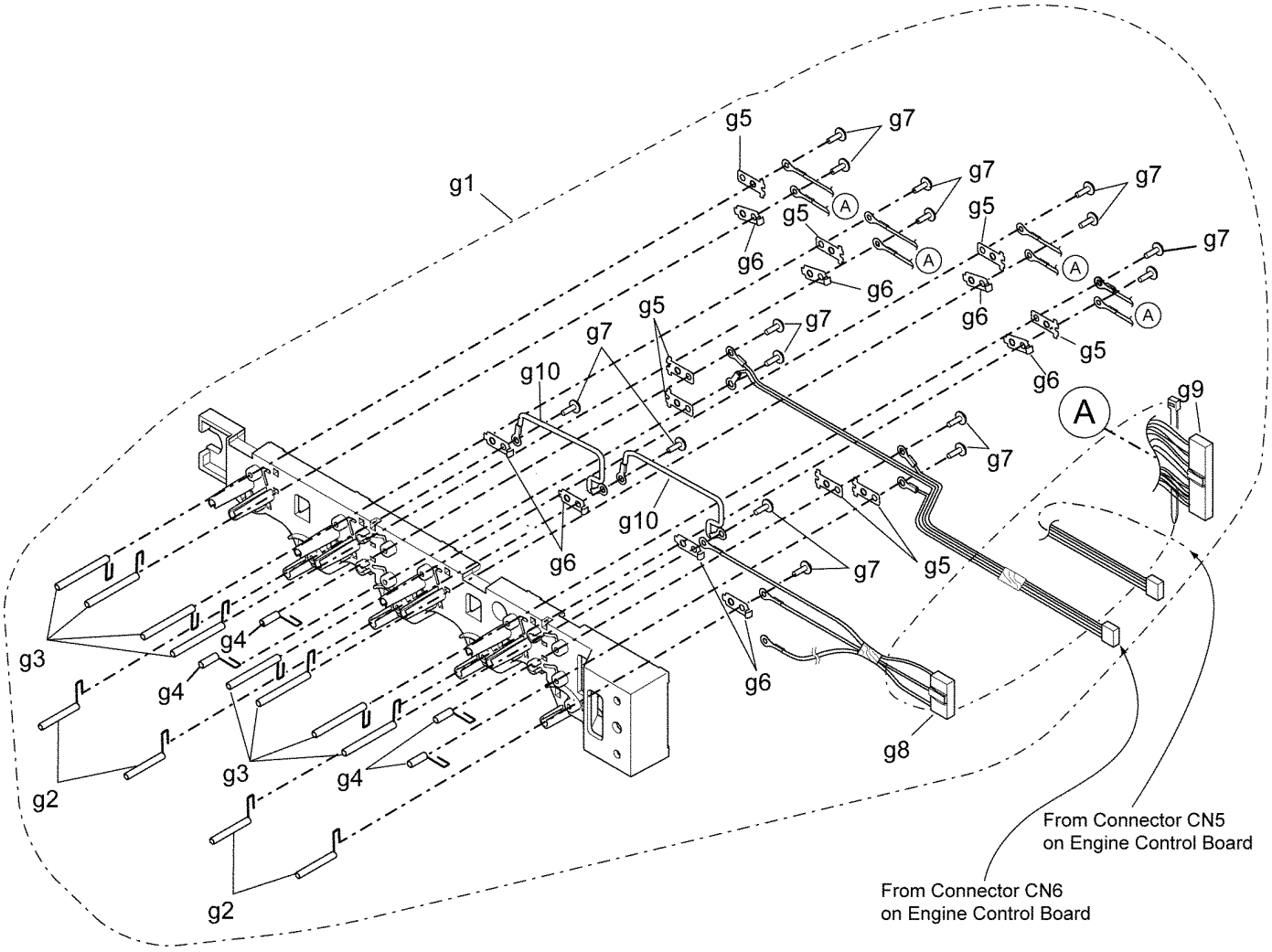
14.2.1. Engine Control Board



Ref. No.	Part No.	Part Name & Description
f1	PJJRC0042Z	Cable for CN3
f2	PJJRC0044Z	Cable with ferrite core for CN1
f3	PJJRC0045Z	Cable with ferrite core for CN45, 46
f4	PJJRC0007Z	Cable for CN11
f5	PJJRC0019Z	Cable for CN7
f6	PJJRC0017Z	Cable for CN44
f7	PJJRCT0010Z	Cable for CN10
f8	PJJRC0033Z	Cable for CN30
f9	PJJRC0014Z	Cable for CN12
f10	PJJRC0013Z	Cable for CN17
f11	PJJRC0030Z	Cable for CN15
f12	PJJRC0008Z	Cable for CN39
f13	PJJRCT0019Z	Cable for CN33
f14	PJJRC0021Z	Cable for CN35
f15	PJJRCT0020Z	Cable for CN34
f16	PJJRC0015Z	Cable for CN8
f17	PJJRCT0008Z	Cable for CN13
f18	PJJRC0016Z	Cable for CN14
f19	PJJRCT0002Z	Cable for CN18
f20	PJJRCT0003Z	Cable for CN23
f21	PJJRC0018Z	Cable for CN29
f22	PJJRCT0026Z	Cable for CN6
f23	PJJRC0029Z	Cable for CN5
f24	PJJRC0036Z	Cable for CN27
f25	PJJRC0003Z	Cable for CN28
f26	PJJRCT0021Z	Cable for CN32
f27	KRCBC160928B	Ferrite Core with case
f28	KRCBC261329B	Ferrite Core with case
f29	PJJRC0043Z	Cable for CN2

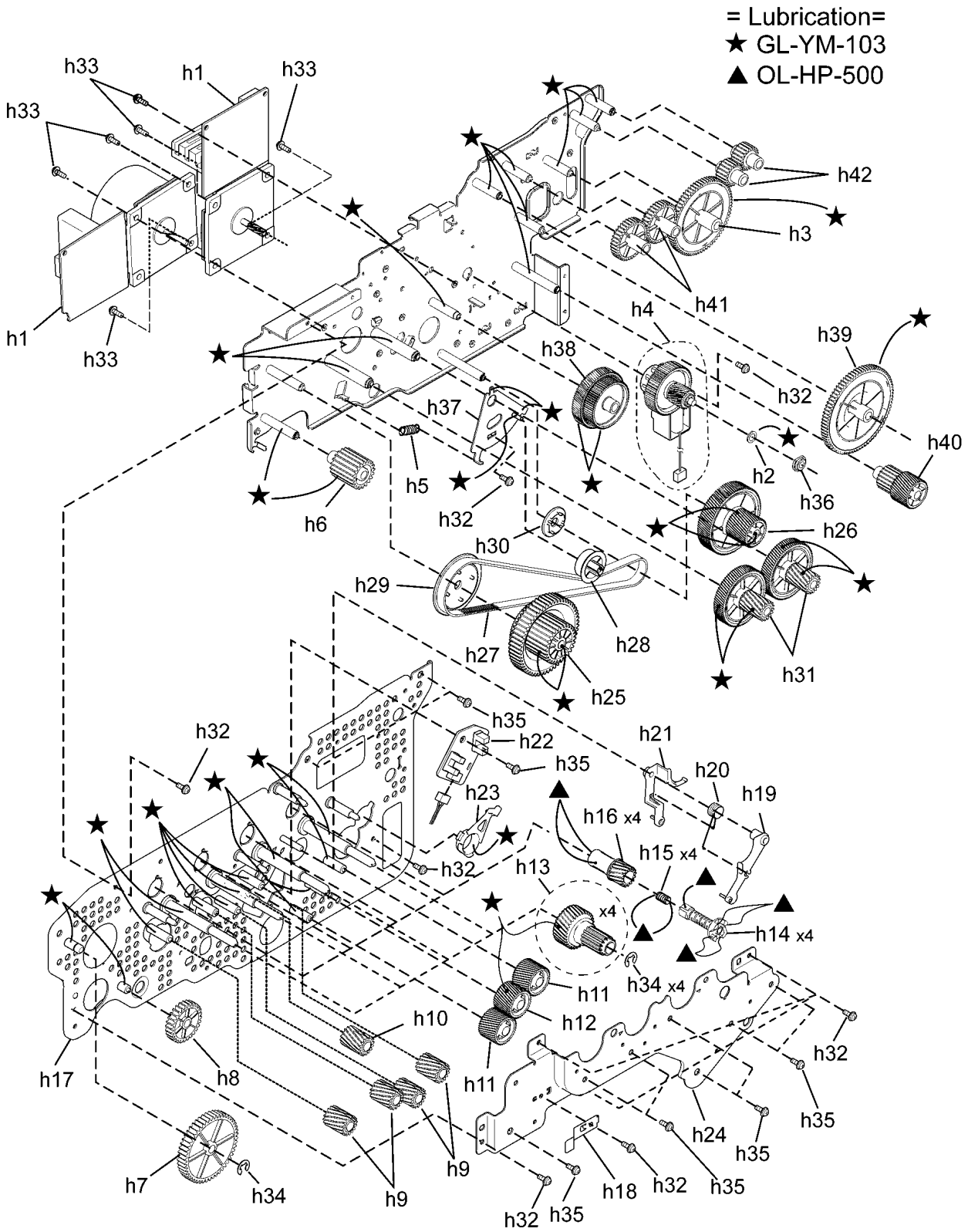
Ref. No.	Part No.	Part Name & Description
f30	KRCBC130714B	Ferrite Core with case

14.2.2. Bias Terminal



Ref. No.	Part No.	Part Name & Description
g1	PJWE00HP0M	Bias Terminal Assembly
g2	PJDSB0147Z	Middle Terminal Spring
g3	PJDSB0077Z	Long Terminal Spring
g4	PJDSB0078Z	Short Terminal Spring
g5	PJUSB0038Z	Bias Terminal Plate A
g6	PJUSB0039Z	Bias Terminal Plate B
g7	XTW23+6FFJ55	Screw 2.3 x 6 mm
g8	PJJRC0001Z	FTR Cable
g9	PJJRCT0029Z	Cable for charging
g10	PJJTCC015Z	Cable

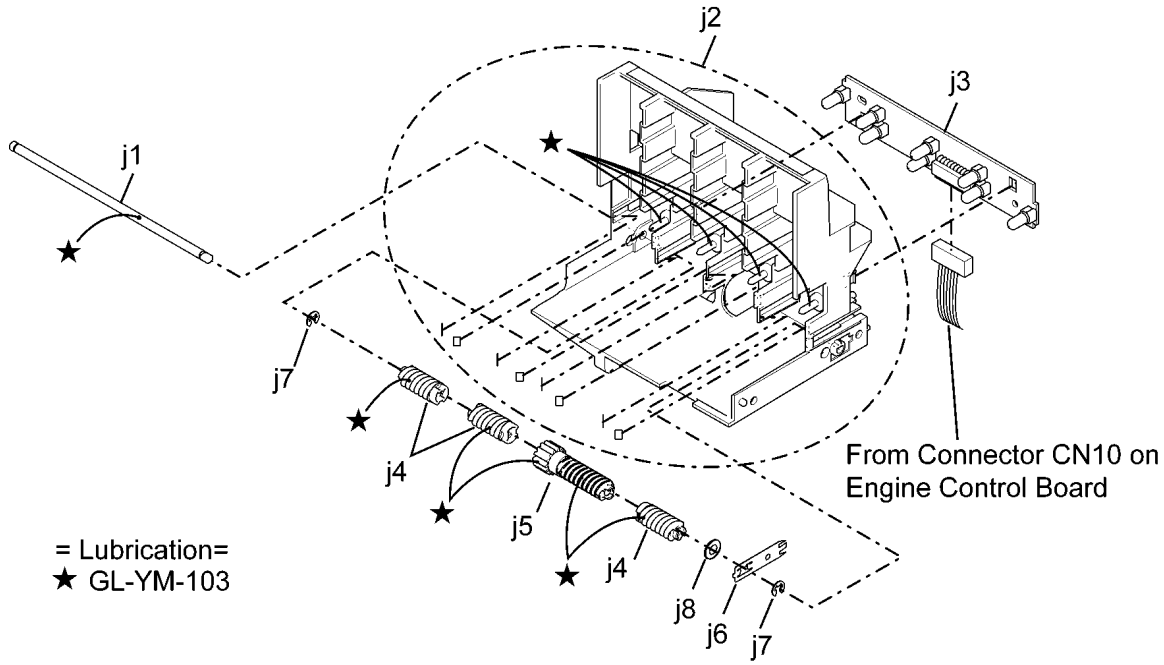
14.2.3. Main Drive Unit



Ref. No.	Part No.	Part Name & Description	Remarks
h1	L6CCKHEK0001	Drive Motor	
h2	PJMDB0315Z	Spacer	
h3	PJDGB0112Z	Hopper Gear C	
h4	PJDPB0011Y	BK Changer Gear with Solenoid	
h5	PJDSB0074Z	Tension Roller Spring	
h6	PJDGB0105Z	Feed Idle Gear	
h7	PJDGB0100Z	Fuser Idle Gear	
h8	PJDGB0099Z	Cam Gear	
h9	PJDGB0095Z	PC Idle Gear (L)	
h10	PJDGB0098Z	PC Idle Gear (R)	

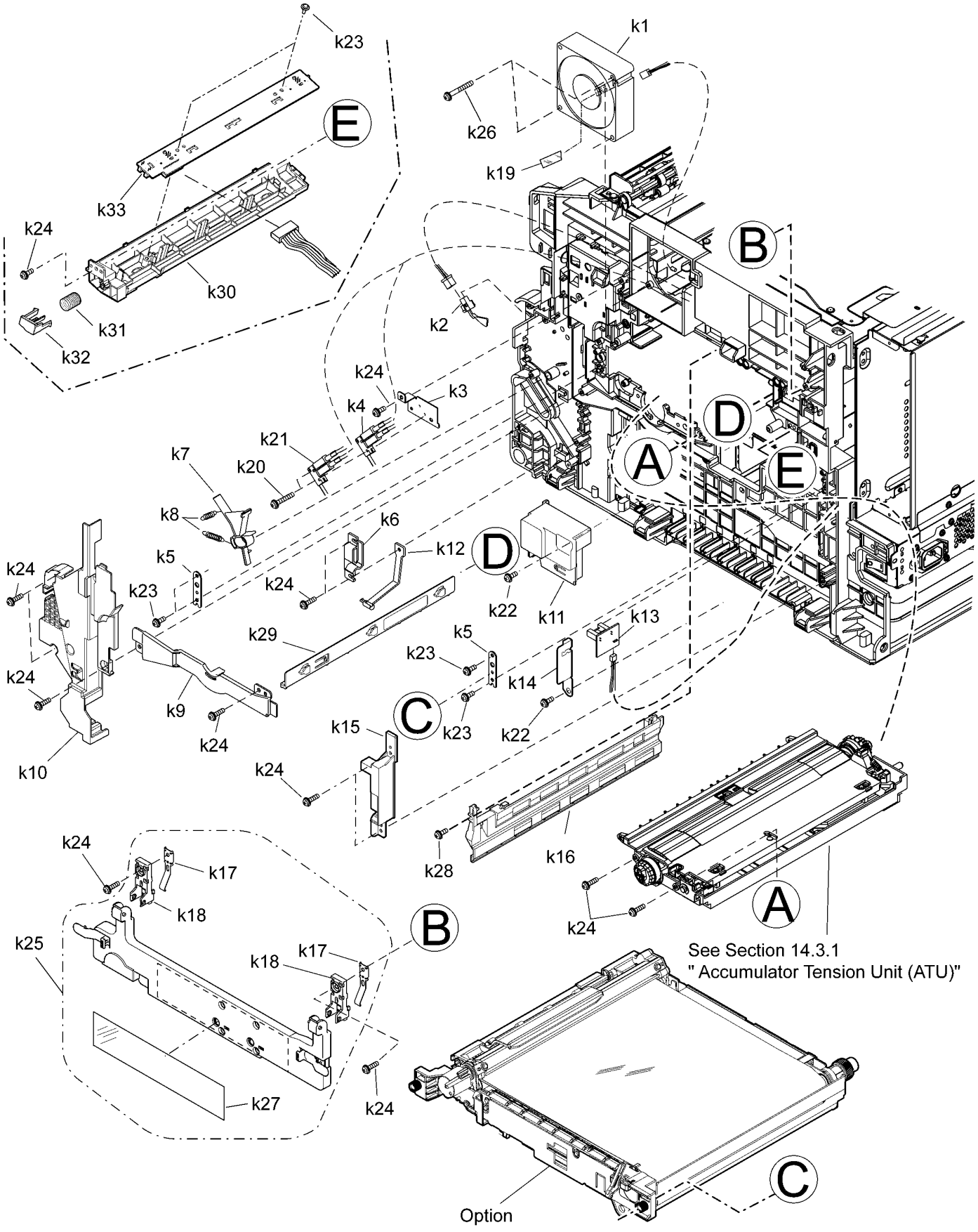
Ref. No.	Part No.	Part Name & Description	Remarks
h11	PJDGB0102Z	Acc Idle Gear (L)	
h12	PJDGB0158Z	Acc Idle Gear (R)	
h13	PJZG2CL500M	OPC Gear Kit	
h14	PJHRB0183Y	DEV. Coupling	
h15	PJDSB0075Z	DEV. Spring	
h16	PJDGB0096Y	DEV. Gear	
h17	PJZE00HP3M	Main Drive Unit Frame	
h18	PJUSB0071Z	Acc GND Spring	
h19	PJHRB0182Z	CMY Home Lever	
h20	PJDSB0121Z	PC Home Spring	
h21	PJHRB0181Z	PC Home Lever	
h22	PJWP00HPGM	OPC Cam Home Position Sensor	RTL
h23	PJHRB0180Z	Acc Bushing	
h24	PJMDB0112W	Drive Unit Bracket (S)	
h25	PJZGCL500M	Feed Pulley Gear Assembly	
h26	PJZGCLHBM	Acc Pulley Gear Assembly	
h27	PJDVB0005Z	Feed Belt	
h28	PJDRB0039Z	Tension Roller	
h29	PJHRB0186Z	Feed Pulley Gear Flange	
h30	PJHRB0185Z	Acc Pulley Gear Flange	
h31	PJDGB0107Z	CMY Change Gear	
h32	XTW3+6LFJ7	Screw 3 x 6mm	
h33	XYC3+FF8FJ	Screw 3 x 8 mm	
h34	XUC5VW	E-ring	
h35	XYN3+F8FJ	Screw 3 x 8 mm	
h36	PJDJB0071Z	Bushing	
h37	PJZE00HP5M	Tension Roller Bracket	
h38	PJDGB0214Z	Intermediate Gear	
h39	PJDGB0159Z	Hopper Change Gear	
h40	PJDGB0104Z	Joint Gear	
h41	PJDGB0113Z	Hopper Gear A	
h42	PJDGB0114Z	Hopper Gear B	

14.2.4. Toner Cartridge Drive Unit



Ref. No.	Part No.	Part Name & Description	Remarks
j1	PJDFB0134Y	Shaft	
j2	PJZE00HP6M	Toner Cartridge Drive Base Assembly	
j3	PJWP00HP4M	Toner Empty Sensor Board	RTL
j4	PJDGB0142Z	Gear	
j5	PJDGB0141Z	Gear	
j6	PJUSB0076Z	Earth Plate	
j7	XUC3VW	E-ring	
j8	XWG4E12FJ	Washer	

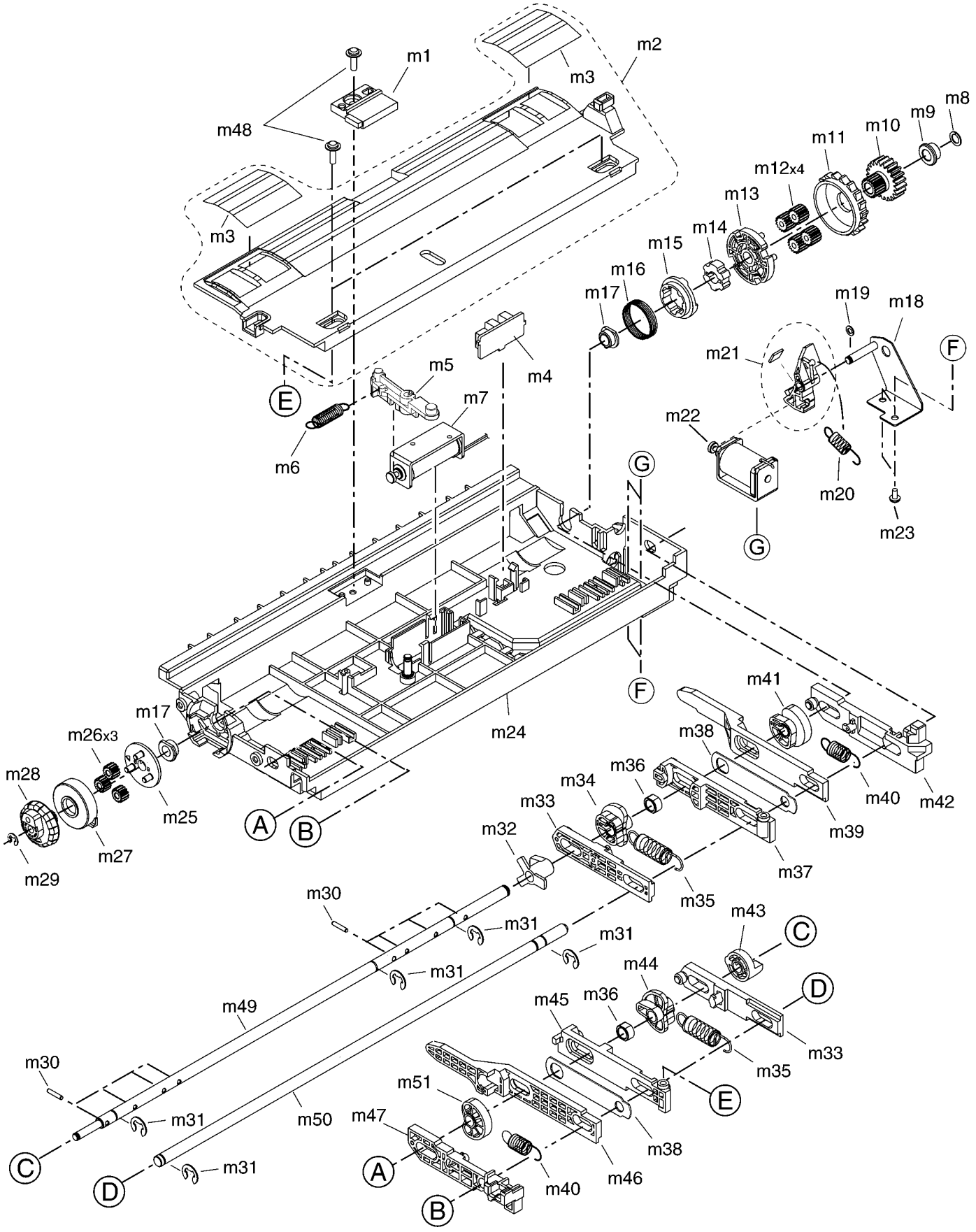
14.3. Right Side Parts



Ref. No.	Part No.	Part Name & Description	Remarks
k1	FBE08A24HS	Fuser Fan Motor	
k2	K0L1BH000001	Front/Right Door Open Detection Switch	
k3	PJMDB0170Y	Interlock Switch Bracket	

Ref. No.	Part No.	Part Name & Description	Remarks
k4	PJWS00HP0M	Interlock Switch	
k5	PJMDB0215X	Acc Fixing Plate	
k6	PJHRB0428Z	Waste Toner Cartridge Left Holder	
k7	PJHRB0201Z	Interlock Lever	
k8	PJDSB0143Z	Interlock Lever Spring	
k9	PJHRB0412Z	IH Cable Shield Cover	
k10	PJKEB0044Z	Interlock Cover	
k11	PJHRC0048Z	Protect Cover	
k12	PJHRB0206Z	Right Cover Plastic Strap	
k13	PJWP00HP5M	Waste Toner Full Detection Board	RTL
k14	PJMDC0014Z	Blind Plate	
k15	PJHRC0105Z	Waste Toner Cartridge Right Holder	
k16	PJHRB0303Y	PC Guide	
k17	PJUSB0066Z	PC Hinge Spring	
k18	PJHRB0406Z	PC Hinge Base	
k19	PJHRB0489Z	Connector Sheet	
k20	XTB22+16JFN	Screw 2.2 x 16 mm	
k21	PJWS00HP1M	Interlock Switch	
k22	XTW3+8LFJ7	Screw 3 x 8 mm	
k23	XTW3+8SFJ7	Screw 3 x 8 mm	
k24	XTW3+12SFJ7	Screw 3 x 12 mm	
k25	PJZE00HPHM	PC Holder Assembly	
k26	XTW3+35SFJ7	Screw 3 x 35 mm	
k27	PJQTC0106Z	PC Holder Label	
k28	XTW3+14SFJ7	Screw 3 x 14 mm	
k29	PJHRC0043Z	PC Guide (Black)	
k30	PJHRC0138Z	Color Registration Board Holder	
k31	PJBVC0071Z	Spring	
k32	PJHRC0137Z	Acc. Unit Detector	
k33	PJWP00HPBM	Registration Sensor Board	

14.3.1. Accumulator Tension Unit (ATU)

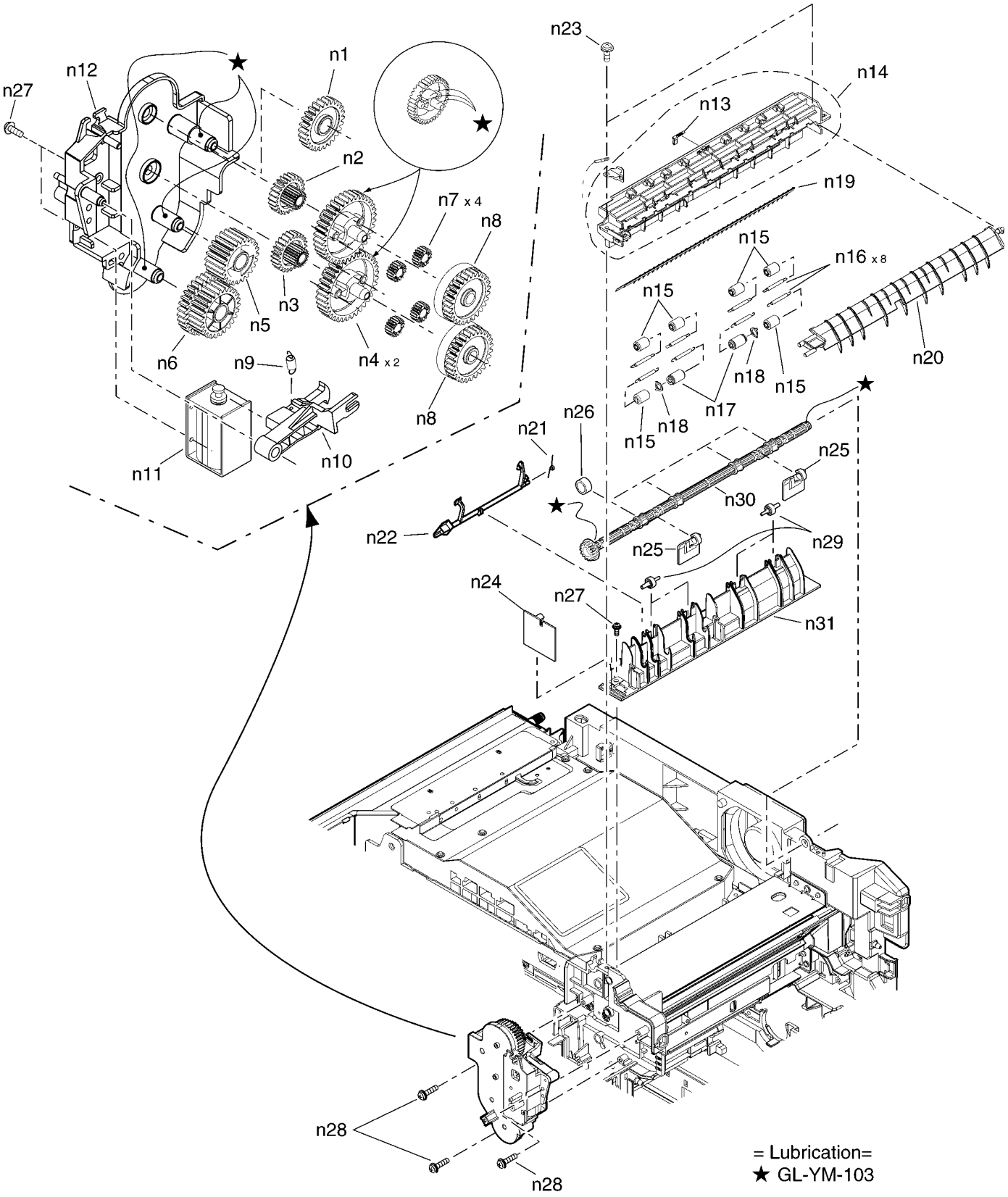


Ref. No.	Part No.	Part Name & Description	Remarks
m1	PJZE00HP7M	FTR Cam Slider Guide with Damper	
m2	PJZE00HP8M	FTR Cam Slider with seal	
m3	PJHRC0100Z	Cam Slider Seal	

Ref. No.	Part No.	Part Name & Description	Remarks
m4	PJWP00HP6M	Accumulator Cam Home Position Sensor	RTL
m5	PJHRC0097Z	Changer Lever	
m6	PJBVC0069Z	Changer Lever Spring	
m7	PJSTC0002Z	Changer Solenoid	
m8	PJNW525Z	Plastic Washer	
m9	PJDJB0047Z	Bushing	
m10	PJDGB0087Z	Double Teeth Gear	
m11	PJDGB0085Z	Outer Gear	
m12	PJDGB0086Z	Planetary Gear	
m13	PJHRC0170Z	Planetary Gear Base (B)	
m14	PJHRB0377Z	Cam Clutch Core	
m15	PJHRB0378Z	Cam Clutch Slider	
m16	PJDSB0130Z	Clutch Spring	
m17	PJDJ06121RZ	Bushing	
m18	PJZE00HPEM	Cam Ratchet Bracket	
m19	PJNW317Z	Plastic Washer	
m20	PJBVC0067Z	Cam Ratchet Spring	
m21	PJZE00HP9M	Cam Ratchet Assembly	
m22	PJSTC0001Z	Cam Ratchet Solenoid	
m23	XSN3+5FJ	Screw 3 x 5 mm	
m24	PJZE00HPAM	Accumulator Tension Unit Base Assembly	
m25	PJHRC0098Z	Planetary Gear Base (A)	
m26	PJDGC0092Z	WTC (Waste Toner Cartridge) Planetary Gear	
m27	PJDGC0090Z	WTC (Waste Toner Cartridge) Outer Gear	
m28	PJDGC0091Z	WTC (Waste Toner Cartridge) Drive Cam	
m29	XUC3VW	E-ring	
m30	XPJ2C10VW	Pin	
m31	XUC5VW	E-ring	
m32	PJHRB0515Z	Home Tab	
m33	PJZE00HPBM	Damper Cam Link Assembly	
m34	PJDHC0012Z	FTR Cam (L)	
m35	PJBVC0068Z	FTR Cam Spring	
m36	PJDJB0052Z	Bushing	
m37	PJHRC0095Z	FTR Lift Lever (L)	
m38	PJMDC0013Z	Plate	
m39	PJHRC0093Z	STR Release Lever (L)	
m40	PJBVC0070Z	STR Cam Spring	
m41	PJDHC0010Z	STR Cam (L)	
m42	PJZE00HPCM	Tension Cam Link (L)	
m43	PJDHC0013Z	Center Cam	
m44	PJDHC0011Z	FTR Cam (R)	
m45	PJHRC0094Z	FTR Lift Lever (R)	
m46	PJHRC0092Z	STR Release Lever (R)	
m47	PJZE00HPDM	Tension Cam Link (R)	
m48	XTW3+10SFJ7	Screw 3 x 8 mm	
m49	PJDFC0094Z	Cam Shaft	
m50	PJDFC0095Z	Sub Shaft	
m51	PJDHC0009Z	STR Cam (R)	

14.4. Front and Top Side Parts

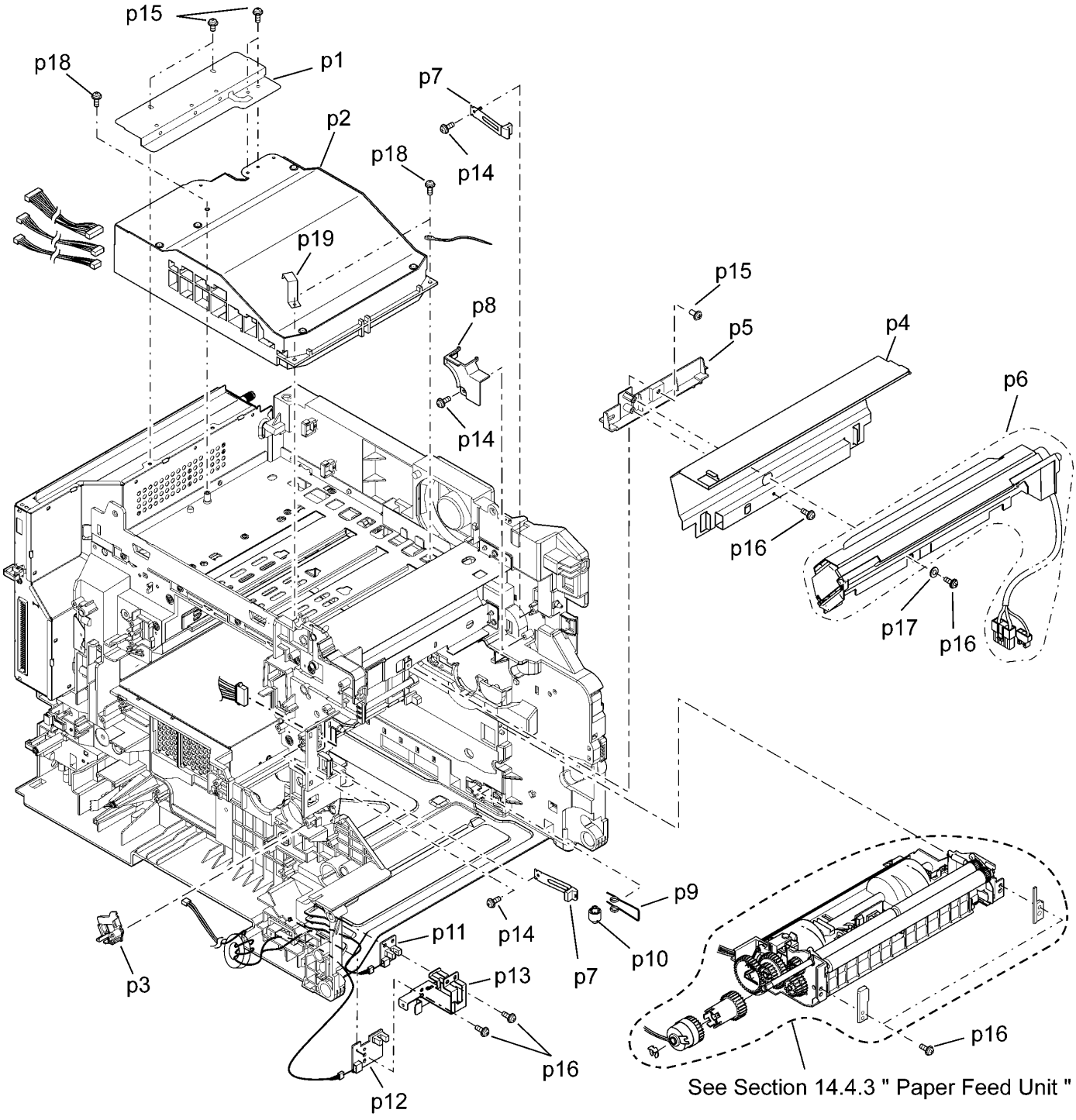
14.4.1. Paper Exit



Ref. No.	Part No.	Part Name & Description	Remarks
n1	PJDGB0128Z	Paper Exit Roller Joint Gear	
n2	PJDGB0167Z	Rotation Switching Gear - A	
n3	PJDGB0166Z	Rotation Switching Gear - B	
n4	PJDGB0168Z	Outer Gear	

Ref. No.	Part No.	Part Name & Description	Remarks
n5	PJDGB0134Z	Intermediate Gear	
n6	PJDGB0127Z	Double Teeth Gear	
n7	PJDGB0029Z	Inner Gear	
n8	PJDGB0025Z	Coupling Gear	
n9	PJDSB0096Z	Switching Lever Spring	
n10	PJHRB0239Z	Switching Lever	
n11	PJDPB0006Y	Rotation Switching Solenoid	
n12	PJHRB0270Z	Paper Exit Gear Cover	
n13	PJHRB0480Z	Paper Stopper (A)	
n14	PJZEQCL500M	Paper Exit Roller Holder Assembly	
n15	PJDRB0067Z	Pinch Roller - A	
n16	PJDSB0095Z	Pinch Roller Spring	
n17	PJDRB0050Z	Pinch Roller - B	
n18	PJHGB0008Z	Star Rubber	
n19	PJMCB0054Z	Discharge Brush	
n20	PJHRB0237Z	Exit Paper Chute	
n21	PJDSB0111Z	Sensor Lever Spring	
n22	PJHRB0238Y	Paper Full Sensor Lever	
n23	XTW3+12SFJ7	Screw 3 x 12 mm	
n24	PJWP00HP7M	Paper Full Sensor Board	RTL
n25	PJHRC0233Z	Exit Restraint Lever	
n26	PJHGB0013Z	Exit Roller Rubber	
n27	XTW3+6LFJ7	Screw 3 x 6 mm	
n28	XTW3+10SFJ7	Screw 3 x 10 mm	
n29	PJHRC0136Z	Exit Sub Roller	
n30	PJDRB0049Z	Paper Exit Roller	
n31	PJHRC0135Z	Exit Frame	

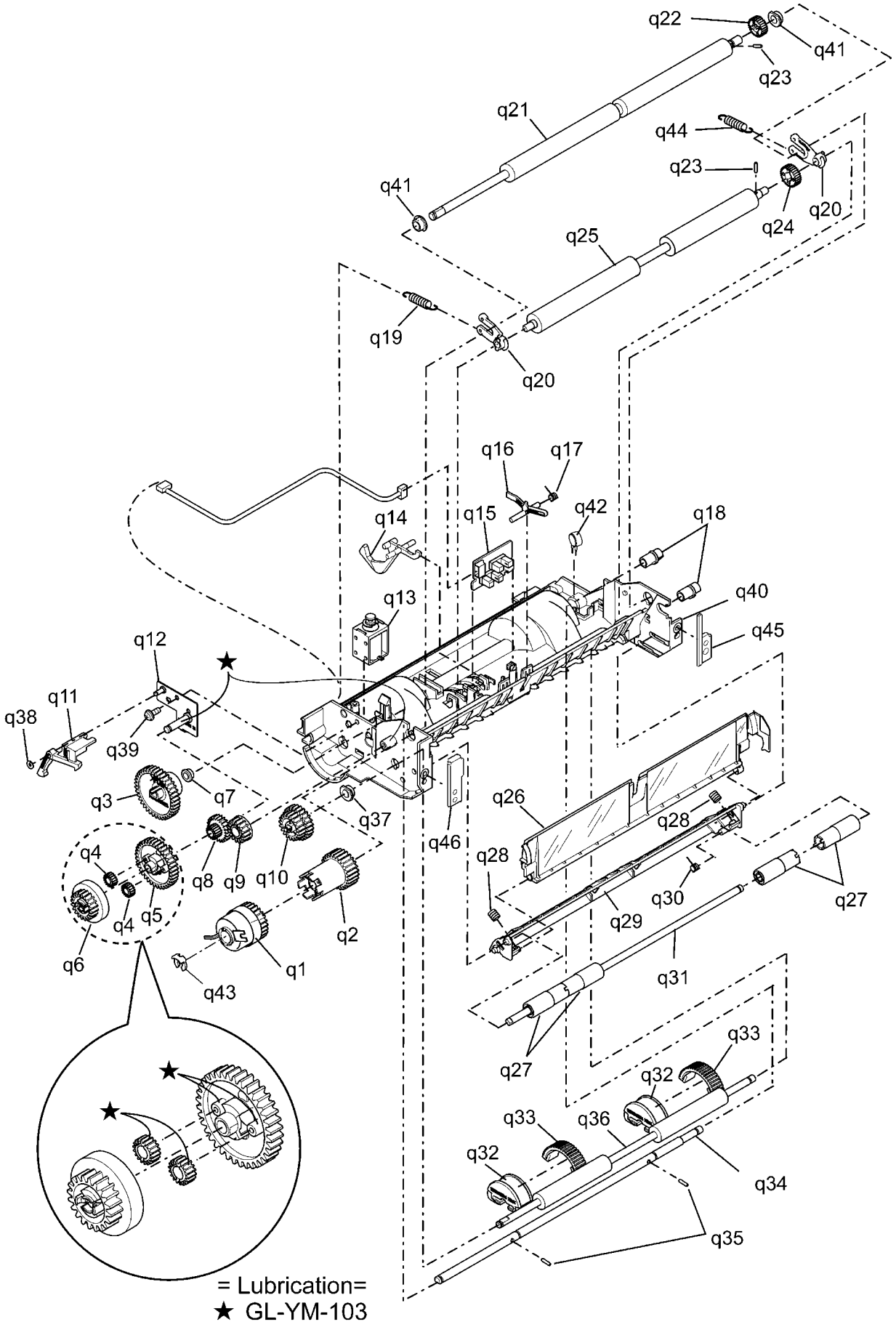
14.4.2. LSU and IH Unit



Ref. No.	Part No.	Part Name & Description	Remarks
p1	PJZU00HP0M	LSU Earth Plate Assembly	
p2	PJSGB0002W	LSU (Laser Scanning Unit)	⚠
p3	PJHRC0139Z	STR Plate Holder	
p4	PJMCB0063Y	IH Shield Cover	
p5	PJHRC0042Z	PC Sub Guide	
p6	PJWE00HP1M	IH Assembly	⚠
p7	PJWE1CL500M	Fuser Hook Assembly	
p8	PJHRB0438Z	IH Harness Cover	
p9	PJDSB0135Z	Cassette Stopper	
p10	PJHRB0411Z	Cassette Stopper Roller	
p11	PJWP00HP8M	MPT Paper Detection Sensor Board	RTL
p12	PJWP00HP9M	MPT Home Position Sensor Board	RTL
p13	PJMDB0159Y	MPT Sensor Cover	
p14	XTW3+10SFJ7	Screw 3 x 10 mm	
p15	XTW3+6LFJ7	Screw 3 x 6 mm	
p16	XTW3+12SFJ7	Screw 3 x 12 mm	

Ref. No.	Part No.	Part Name & Description	Remarks
p17	XWG3E12FJ	Washer	
p18	XYN3+F10FJ	Screw 3 x 10 mm	
p19	PJBUC0081Z	LSU Earth Plate	

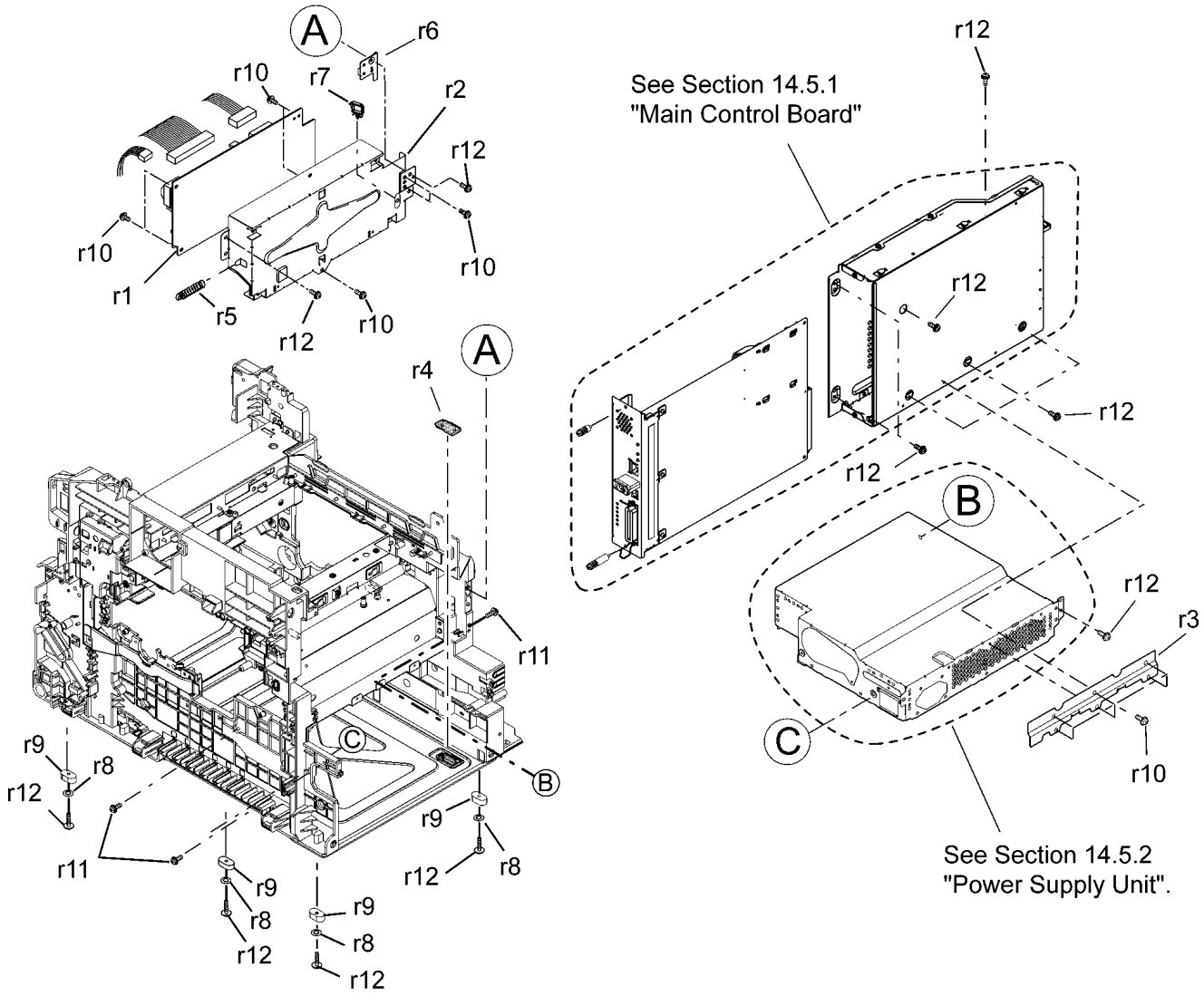
14.4.3. Paper Feed Unit



Ref. No.	Part No.	Part Name & Description	Remarks
q1	PJDCB0002Y	Registration Roller Clutch	

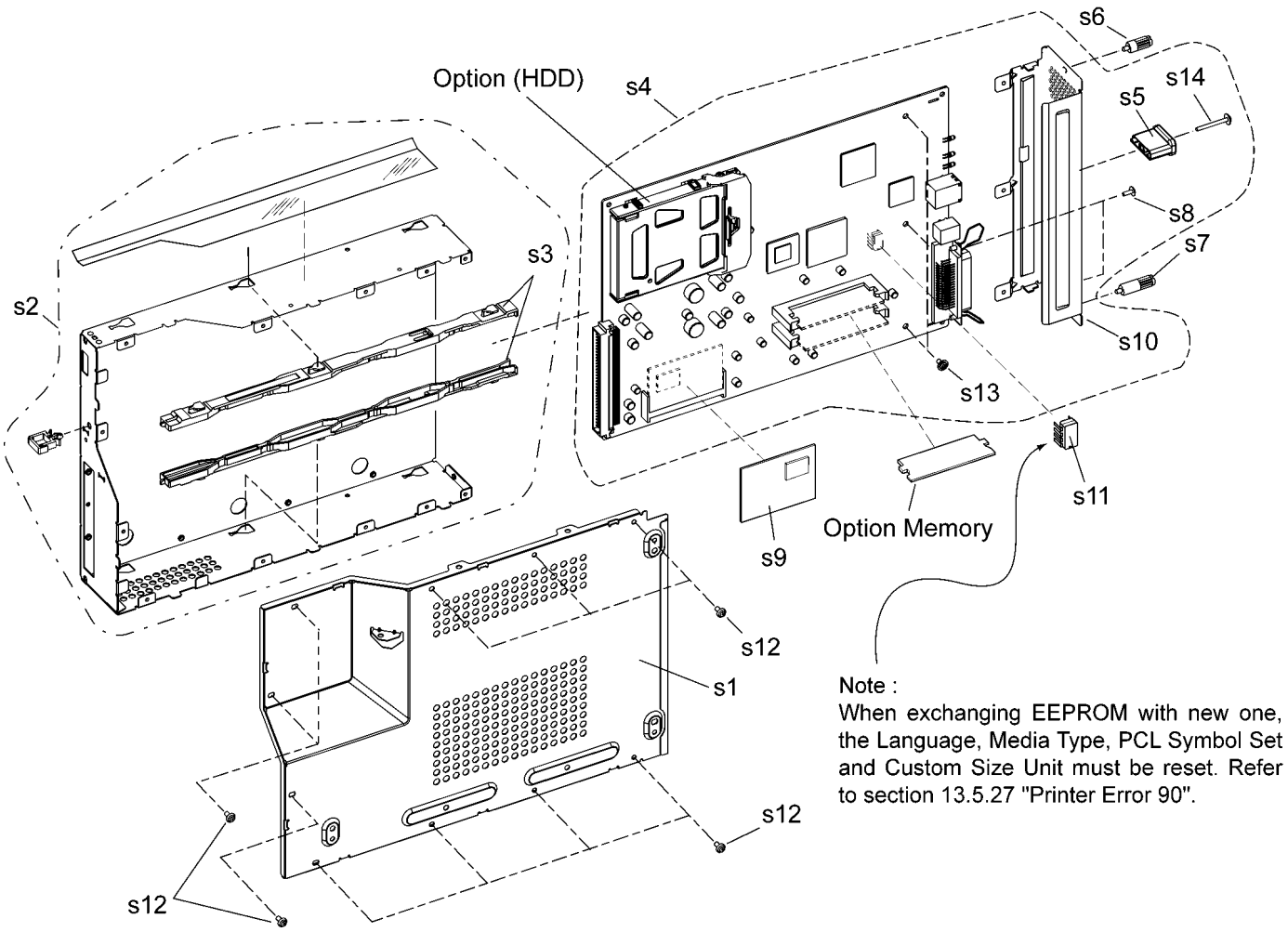
Ref. No.	Part No.	Part Name & Description	Remarks
q2	PJDGB0171Z	Registration Roller Joint Gear	
q3	PJDGB0119Z	Pickup Gear	
q4	PJDGB0029Z	Inner Gear-A	
q5	PJDGB0120Z	Outer Gear	
q6	PJDGB0121Z	Inner Gear-B	
q7	PJDJ06121RZ	Bushing	
q8	PJDGB0149Z	Gear	
q9	PJDGB0124Z	Idle Gear	
q10	PJDGB0123Z	Feed Gear	
q11	PJZLCL500M	Ratchet Arm Assembly	
q12	PJZH00HP0M	Gear Bracket	
q13	PJDPB0004Y	Pickup Solenoid	
q14	PJHRB0232Y	Paper Empty Sensor Lever	
q15	PJWP00HPAM	Paper Empty/Registration Sensor Board	RTL
q16	PJHRB0227Z	Registration Sensor Lever	
q17	PJDSB0124Z	Registration Sensor Lever Spring	
q18	PJDJB0019Z	Bushing	
q19	PJDSB0199Z	Spring	
q20	PJDJB0030Z	Registration Roller Tension Arm	
q21	PJDRB0047Y	Registration Pinch Roller	
q22	PJDGB0126Z	Registration Pinch Roller Gear	
q23	XPL2A8VW	Pin	
q24	PJDGB0125Z	Registration Roller Gear	
q25	PJDRB0046W	Registration Roller	
q26	PJZE6CL500M	Registration Paper Guide Assembly	
q27	PJDRC0087Z	Pinch Roller	
q28	PJDSB0091Y	Pinch Roller Spring	
q29	PJHRB0233Z	Pinch Roller Holder	
q30	PJDSB0125Z	Paper Guide Spring	
q31	PJDFB0125Y	Pinch Roller Shaft	
q32	PJHRB0224Z	Pickup Rubber Frame	
q33	PJDRB0044Z	Pickup Rubber	
q34	PJDFB0087Z	Pickup Roller Shaft	
q35	XPJ2A14VW	Pin	
q36	PJDRC0073Z	Paper Feed Roller	
q37	PJDJ05041RZ	Bushing	
q38	PJNW2111Z	Plastic Washer	
q39	XTW3+6LFJ7	Screw 3 x 6 mm	
q40	PJZCCL500M	Paper Feed Unit Frame Assembly	
q41	PJDJ06061CZ	Bushing	
q42	D4EAC7510001	Varistor	
q43	PJHRA0784Z	Snap Ring	
q44	PJDSB0200Z	Spring	
q45	PJMDC0006Y	Spring Protector (R)	
q46	PJMDC0005Y	Spring Protector (L)	

14.5. Rear Side Parts (Power Supply, Main Control and High Voltage Boards)



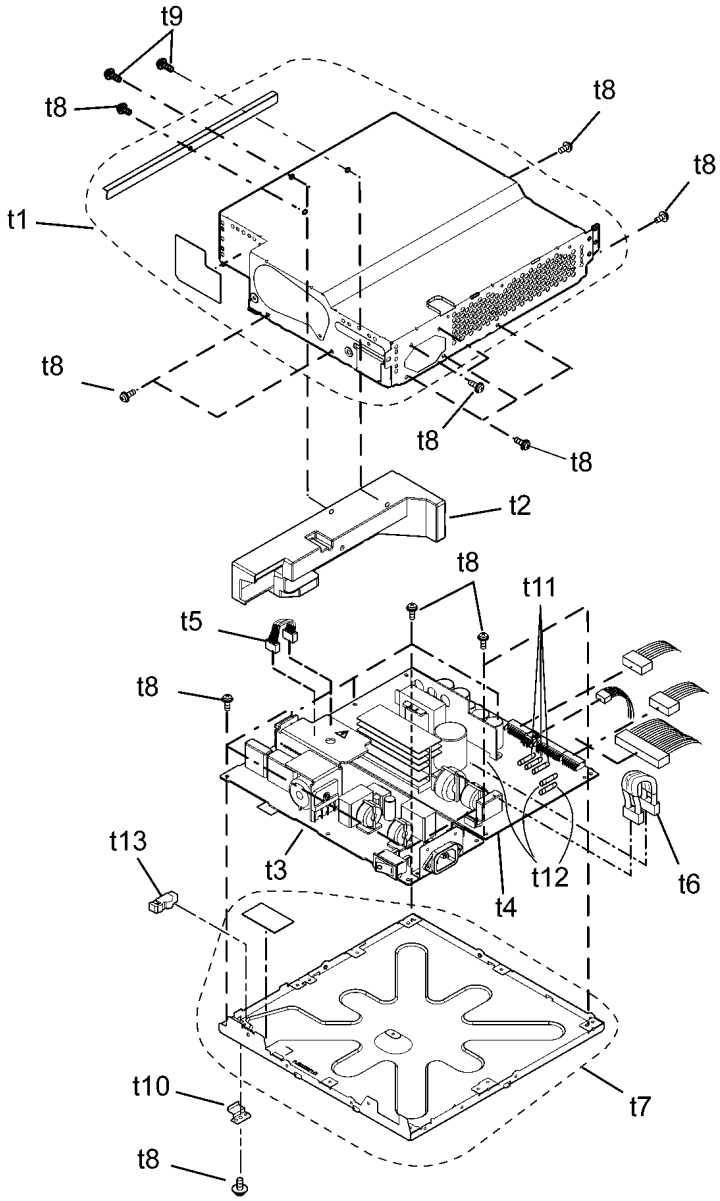
Ref. No.	Part No.	Part Name & Description	Remarks
r1	EUKMBN942HA	High Voltage Board Complete	Non Repairable
r2	PJWC00HP4M	High Voltage Board Shield Cover	
r3	PJMCC0023Z	Earth Plate	
r4	PJHRC0044Z	Cassette Holder	
r5	PJDSB0182Z	Earth Spring	
r6	PJMDB0126Y	Earth Plate	
r7	LWS-3S	Paddle	
r8	XWG3FUFJ	Washer	
r9	PJHGB0007Z	Rubber Foot	
r10	XTW3+6LFJ7	Screw 3 x 6 mm	
r11	XTW3+8LFJ7	Screw 3 x 8 mm	
r12	XTW3+12SFJ7	Screw 3 x 12 mm	

14.5.1. Main Control Board



Ref. No.	Part No.	Part Name & Description	Remarks
s1	PJWC00HP1M	Main Board Shield Cover Assembly	
s2	PJWC00HP2M	Main Board Shield Base Cover Assembly	
s3	PJHRB0204Z	Main Board Guide Rail	
s4	PJWP00HP2M	Main Control Board Complete	RTL
s5	PJHRB0317Z	Main Control Board Knob	
s6	PJNEB0018Y	Lock Screw (S)	
s7	PJNEB0019Y	Lock Screw (L)	
s8	XSN3+6FJ	Screw 3 x 6 mm	
s9	PJWP00HP1M	ROM Board Complete	Non Repairable
s10	PJWC00HP3M	Main Control Board Bracket	
s11	PJWV00HP1M	EEPROM (IC7)	See note.
s12	XTW3+6LFJ7	Screw 3 x 6 mm	
s13	XTW3+6LFJ	Screw 3 x 6 mm	
s14	XTW3+25LFJ7	Screw 3 x 25 mm	

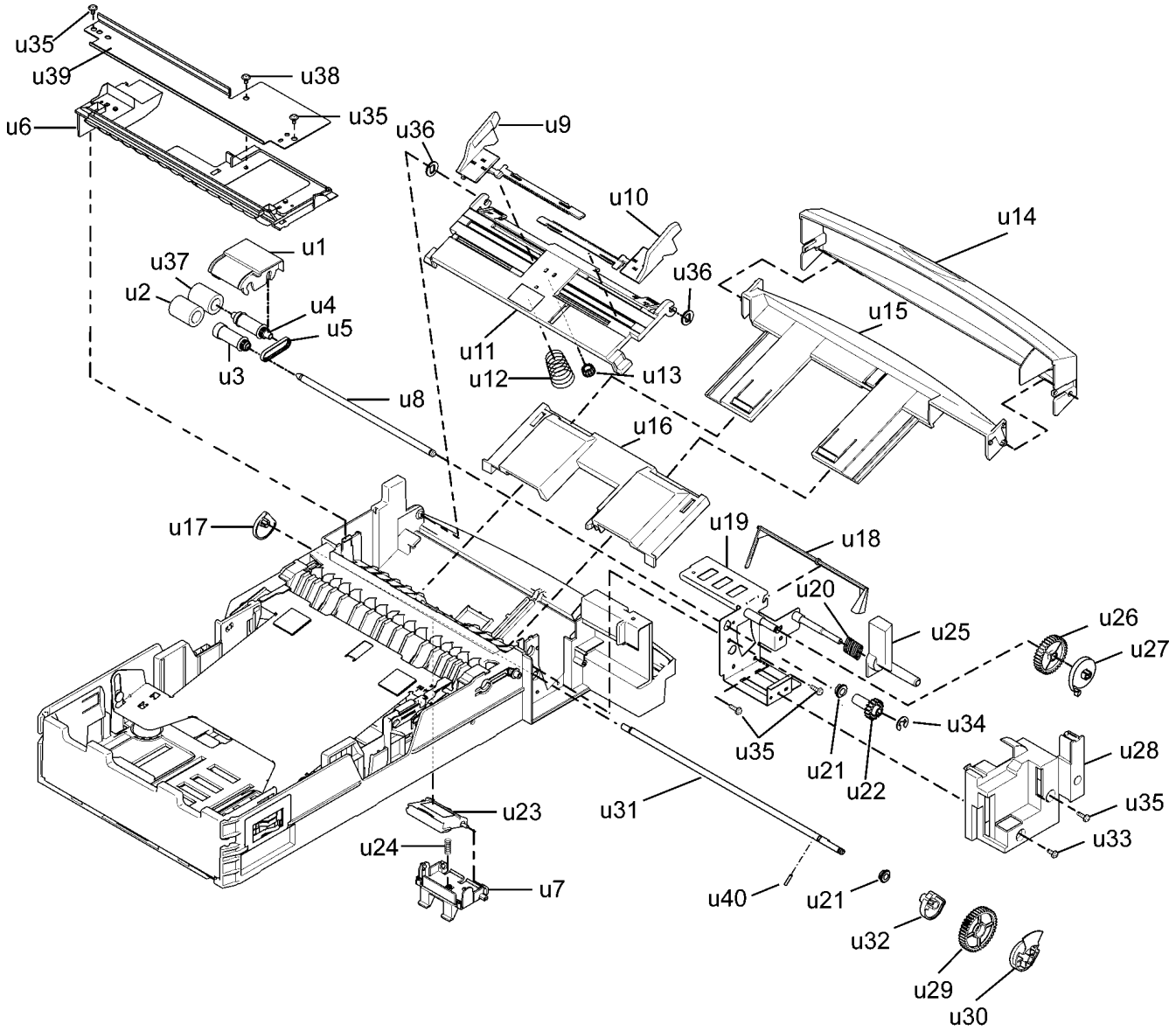
14.5.2. Power Supply Unit



Ref. No.	Part No.	Part Name & Description	Remarks
t1	PJWC00HP0M	Power Supply Shield Cover Assembly	
t2	PJHRC0047Z	Power Supply Inner Duct	
t3	PJWP00HPCM	IH Power Supply Board	Non Repairable ⚠
t4	N0AB3GJ00009	Power Supply Board	Non Repairable ⚠
t5	PJJRCT0022Z	Cable	
t6	PJJRC0035Z	Cable	
t7	PJZB00HP0M	Power Supply Base Plate	
t8	XTW3+6LFJ7	Screw 3 x 6 mm	
t9	XTW3+12SFJ7	Screw 3 x 12 mm	
t10	PJJBC0016Z	Earth Plate	
t11	K5D402APA008	Fuse (F2, F3, F4)	⚠
t12	K5E402APA004	Fuse (F5, F6, F7)	⚠
T13	PJHRC0140Z	Earth Plate Cover	

14.6. Cassette

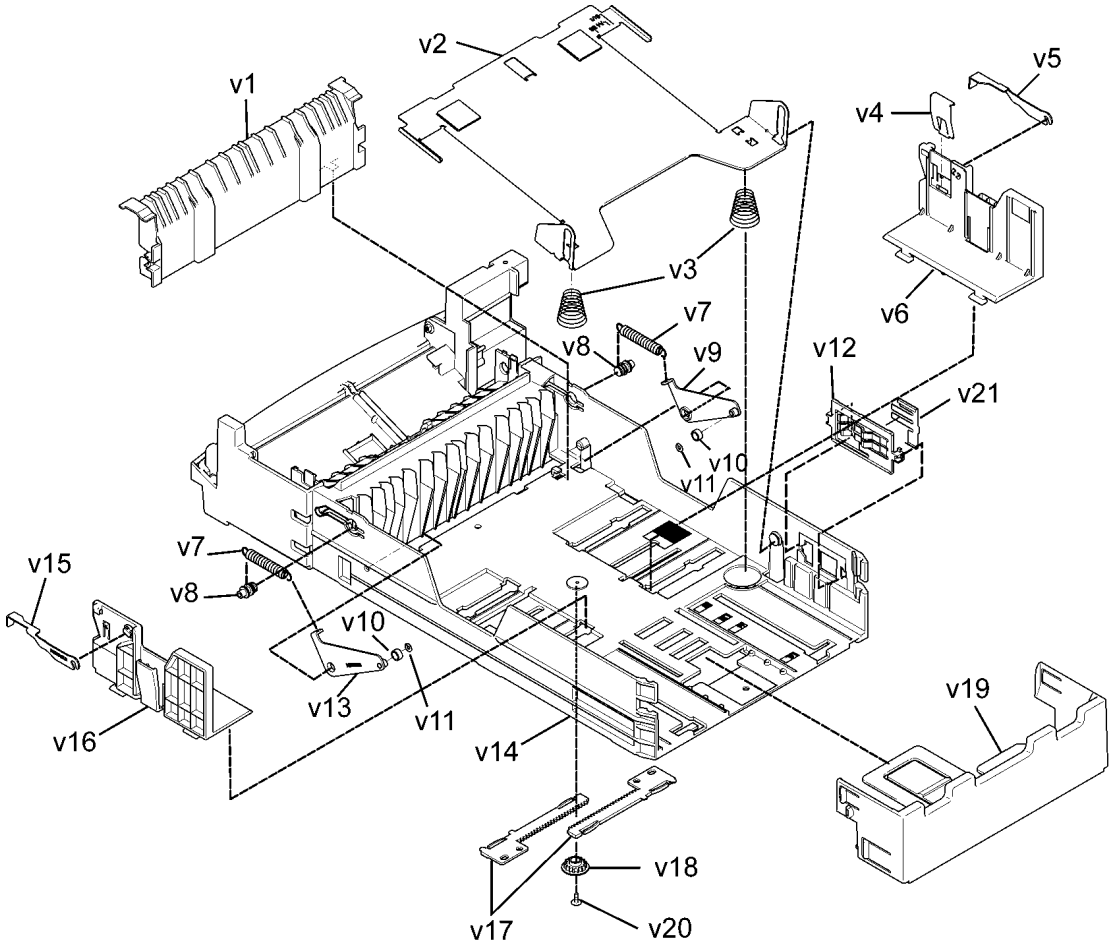
14.6.1. Cassette (1)



Ref. No.	Part No.	Part Name & Description
u1	PJHRB0251Z-1	Pickup Roller Holder
u2	PJDRB0051Z	Pickup Rubber
u3	PJDRA0101Z	One-way Wheel
u4	PJHRA0848Z	Pickup Wheel
u5	PJDVB0006Z	Pickup Roller Timing Belt
u6	PJZEECL500M	Upper Cassette Paper Chute Assembly
u7	PJHRB0369Z-1	Delay Pad Holder
u8	PJDFB0131Y	Pickup Roller Shaft
u9	PJHRB0242Z-1	Left Paper Guide
u10	PJZEFCL500M	Right Paper Guide Assembly
u11	PJZE7CL500M	MPT Paper Holder
u12	PJBVC0116Z	MPT Paper Holder Spring
u13	PJDGB0129Z	Pinion Gear
u14	PJKEB0057Y-1	Tray Cover
u15	PJZEWCL500M	Paper Tray Assembly
u16	PJHRB0362Z-1	Paper Tray Base
u17	PJDGB0136Z	Left Cam
u18	PJHRB0247Z	MPT Paper Empty Sensor Lever
u19	PJMDB0171Y	Cassette Gear Bracket
u20	PJDSB0123Z	Spring
u21	PJDJ06061CZ	Bushing
u22	PJDGB0130Z	Roller Gear
u23	PJZE00HPMM	Delay Pad Assembly
u24	PJDSB0098Y	Delay Pad Spring

Ref. No.	Part No.	Part Name & Description
u25	PJHRB0503Z	Tray Protector
u26	PJDGB0133Z	Idle Gear
u27	PJDGB0138Z	Gear Spacer
u28	PJHRB0363Z-1	Gear Cover
u29	PJDGB0137Z	MPT Cam Gear
u30	PJHRB0313Z	Roller Position Arm
u31	PJDFC0174Z	Cam Shaft
u32	PJDHC0018Z	Right Cam
u33	XTW3+6LFJ7	Screw 3 x 6 mm
u34	XUC4VW	E-ring
u35	XTW3+10SFJ7	Screw 3 x 10 mm
u36	PJHGB0021Z	Friction Pad
u37	PJDRB0084Z	Pickup Roller
u38	XTW3+8LFJ7	Screw 3 x 8 mm
u39	PJZE00HPNM	MPT Upper Plate with Label
u40	XPL2A10VW	Pin

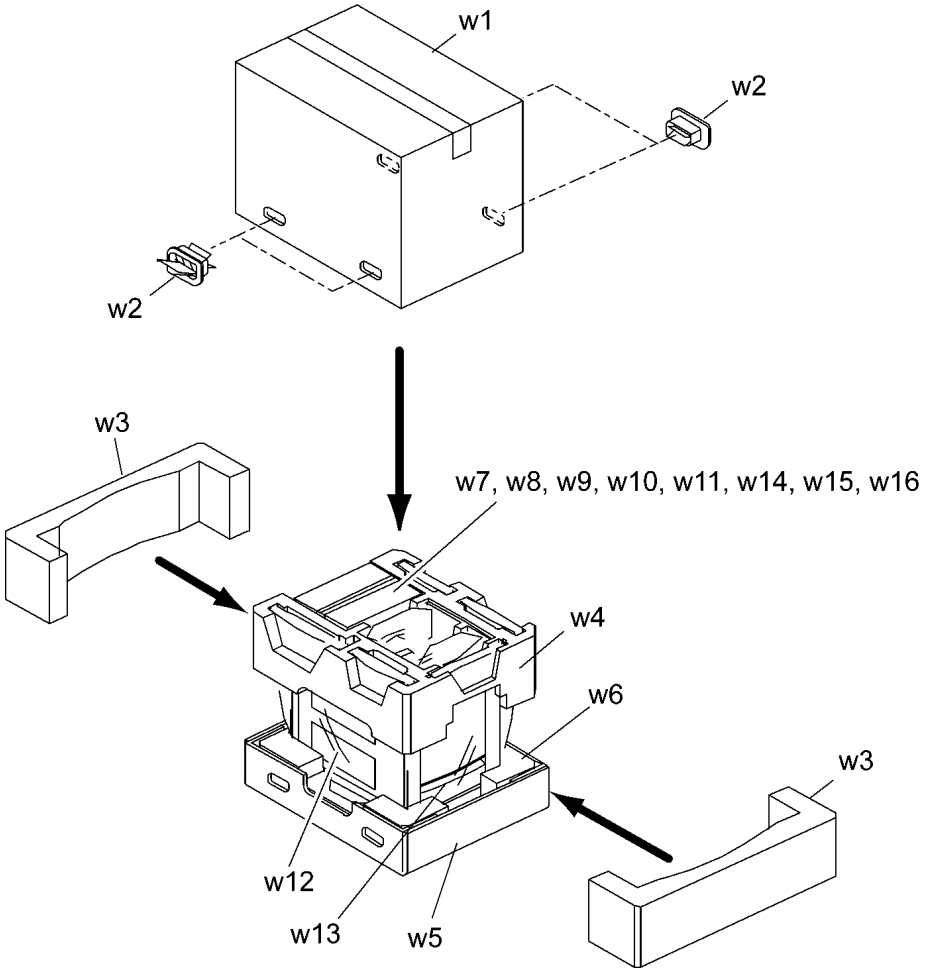
14.6.2. Cassette (2)



Ref. No.	Part No.	Part Name & Description
v1	PJHRB0222Z-1	Under Cassette Paper Chute
v2	PJZE00HPFM	Cassette Base Plate
v3	PJBVC0124Z	Lift Large Spring
v4	PJUSB0049Z	Side Pressure Spring
v5	PJMDB0130Z	Corner Separator (L)
v6	PJZEGCL500M	Paper Side Guide (L) Assembly
v7	PJDSB0088Z	Lift Small Spring
v8	PJHRB0220Z	Slider
v9	PJZE00HPGM	Lift Plate (L)
v10	PJHRB0360Z	Lift Bushing
v11	PJNW316Z	Plastic Washer
v12	PJHRB0500Z	Paper Size Detector
v13	PJZE00HPJM	Lift Plate (R)
v14	PJZERCL500M1	Cassette Base Assembly
v15	PJMDB0131Z	Corner Separator (R)
v16	PJHRB0216Z-1	Paper Side Guide (R)
v17	PJHRB0311Z	Rack

Ref. No.	Part No.	Part Name & Description
v18	PJDGB0148Z	Pinion Gear
v19	PJHRB0217Y-1	Paper Size Adjuster
v20	XTW3+8FFJ	3 x 8 mm
v21	PJUSB0105Z	Paper Size Detector Support Plate

14.7. Packing Material



Ref. No.	Part No.	Part Name & Description	Remarks
w1	PJPGC0140Y	Upper Carton Box	
w2	HP-601W2-S	Joint	
w3	PJPNB0103Z	Side Pad	
w4	PJPNB0087W	Top Pad	
w5	PJPGB0096Z	Bottom Carton Box	
w6	PJPNB0088Y	Bottom Pad	
w7	PJJXC0058Z	Printer Driver and Operation Manual	
w8	PJQQC0029Z	Setup Guide (English)	
w9	PJZE00HP4M	Calibration Card	
w10	PJPKB0029Z	Accessory Box	
w11	K2CG3DH00047	AC Cord	⚠
w12	PJPPB0004Z	Plastic Bag for printer	
w13	PJPNB0100Z	Cassette Inner Pad	
w14	PJHRB0413Y	HDD Holder	
w15	PJHRB0414Y	HDD Lock Lever	
w16	XYN3+C6FJ	Screw for fixing HDD	

14.8. Toner Cartridge Dummy Case

Ref. No.	Part No.	Part Name & Description
x1	PJYD00HP0M	Dummy Toner Cartridge Case (Black)
x2	PJYD00HP1M	Dummy Toner Cartridge Case (Cyan)
x3	PJYD00HP2M	Dummy Toner Cartridge Case (Magenta)
x4	PJYD00HP3M	Dummy Toner Cartridge Case (Yellow)

14.9. Print Cartridge Dummy Case

Ref. No.	Part No.	Part Name & Description
y1	PJYD00HP4M	Dummy Print Cartridge Case (Black)
y2	PJYD00HP5M	Dummy Print Cartridge Case (Color)

14.10. PbF Solder Service Part Number

The service part number for the recommended PbF solder is RMA02M705-08.

When the recommended PbF solder is not available at Senju Metal Industry Co., Ltd., use this PbF solder part number.